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MOHAMMAD A. QADEER

URBANIZATION, GLOBALIZATION AND INSTITUTIONAL LAGS IN PAKISTAN

Abstract

Pakistan is an urbanized society, spatially and materially. Urban modes of living have spread. Globalization is further accelerating the urbanization of the society. While the society is being strung into the urban modes of living, its beliefs, norms and values remain anchored in the agrarian social order. This disparity has spawned wide ranging institutional lags. First, the non-material norms are lagging behind material culture. Second, private interests overshadow the public space. Third, the lived culture is not in sync with the imagined culture. These lags are impeding Pakistan's good governance and development.

Urbanization precipitates four sets of functional imperatives. It necessitates the provision of collective goods and services. It requires redefining property rights. It calls for a moral order based on impersonal mores and formal rules rather than customs. It lays the ground for communities of interest and modernization of values and norms. These imperatives remain unfulfilled. Institutional lags are structural manifestation of these unfulfilled imperatives. A strategy of deliberate urbanism is recommended to overcome this condition.

The issue

Pakistan is now an urban society, spatially and materially. Of its estimated population of 155 million (2006), about 36% lived in cities and towns but adding the population of high density rural areas, representing urbanization by population implosion, the percentage of people living in urban communities would come to 57-58%. [(Qadeer 2006:51)] Not only a majority is living in urban or urban -like conditions, but also the rest of the country classified as rural has been swept by the urban material culture such as radio and TV, vans, cash economy etc. Urbanism as a mode of living is now the defining characteristic of Pakistan.

The material and spatial urbanism is embedded in norms and values of largely rural and tribal origins. This condition has resulted in the material culture being out of synch with the non- material culture and economic and technological institutions being in imbalance with social and moral orders. Pervasive institutional lags characterize the state and society of Pakistan.

These institutional lags underlie the ineffectiveness or what Myrdal long ago called the 'soft' state and myriad of problems that besiege the society [Myrdal 1968:66].

For example, be it the corruption in government or gradual erosion of the writ of the state, the causes of such problems lie in institutions based on the particularistic norms, personalized decision making and privileging of the clan and Biradari bonds. These are the characteristics of rural institutions that undergird the state structure.

Similarly, Pakistani society continues to be organized around the institutions of family and clan, by the ascribed statuses rather than achievement orientation, patriarchal relations, subordination of women and the pursuit of honour, for example. This social order is essentially rural in morality and values, though recent urbanization is eroding its foundations. The result is that the society is full of paralysing contradictions. Later I will discuss with examples these social contradictions, presently I just want to point out that institutional lags are the structural features of contemporary Pakistani state and society.

Material bases of urbanism

An urban way of life encased in rural norms and values has come to define Pakistan. This is a widely acknowledged fact about Pakistani society and culture. It is a common refrain to say that 'Pakistan's problem is feudalism', namely a feudal or rural mindset and ways of life are obstructing the progress of the country. Obviously the incompatibility of feudal ways with the demands of modern living is assumed to be the source of national ills.

How steeped is Pakistani society in urban ways of life can be observed from a few key indicators. I have already pointed out that a majority of population lives in urban areas or under urban spatial conditions. Only about one-fifth of Pakistan's national income is now produced by the agriculture sector, namely 22.3% of the Net National Product at constant factor prices came from the agriculture, forestry and fishing-hunting in 2005-06.

Although the modal (35.7%) group of employed persons (10 years or older) in Pakistan's labour force worked in agriculture and fisheries and forestry in 2005-06, yet they were a minority. Almost two-third of the labour force was engaged in non-agricultural occupations. It must also be pointed out that agriculture now is a business requiring inputs of credit, chemicals, skilled labour and commercial savvy. It is only on marginal farms and in remote areas that share-cropping and other customary ways of cultivation are employed. The point is that the division of labour, specialization and cash economy are essentially the conditions of work on Pakistani farms.

Social relations of production have changed over the past half-century with development. Almost gone are the customary exchanges of services and labour for annual shares from the harvest and work specialization by hereditary occupational castes. Circulatory migration of rural labour to cities in Pakistan and abroad has become a source of employment for almost one-quarter to one-third of the rural population. Their remittances are a substantial source of village incomes.

City economies have long diversified from being based primarily on trade and administration to include industrial and service activities. Poor Pakistanis have imbibed unprecedented entrepreneurship in eking living out of the meagre opportunities in the informal sector. Poverty is endemic and persistent. Class polarization is widening. The whole population is being strung into a proto capitalist mode of production.

It is on the material base of everyday living that the imprint of modernity and urbanism is striking. For example, in 2004, there were 2.7 million registered motorcycles and 1.3 million cars, which with the national household size of 6.8 persons meant that about 34 million persons had access to the motorized transport. Suzuki van as a means of public transport has penetrated far-flung areas, breaching their isolation and linking them with cities.

The communication revolution is the most recent modern cultural phenomenon to sweep the country. FM radio stations, legal and illegal, have sprouted all over the country. Even the NWFP's tribal areas are reported to have 49 unapproved radio stations, where Mullahs duel with each other orally [(The News 2006)]. There are more than 50 TV channels to choose from on cable television and more are being continually added. Mobile phones have tipped the daily life into the electronic connectivity. Estimates of cell phones in circulation range from 15 to 40 million, so rapid is their spread that in one year, 2004 to 2005, their number increased from 5 to 15 million. [(The News 2005)] Like all other activities, the illicit sector of mobile phones is also thriving; about 1.5 million phones were connected illegally [(Jang:2007)]

Recently a new force that accelerates the spread of urbanism in a society has been sweeping the world. The process of globalization is adding another layer to the urban system of Pakistan. Let us look at this process. How it advances the transformation of the society towards the urban modes of living?

Globalization as a force of change

Globalization is both an economic force and a cultural process. Economically it is the phenomenon of the free flow of goods, services, finance, enterprises and to some extent labour across national boundaries. It is anchored in the structure of free trade and international rules that supra-national bodies (UN, WTO IMF etc.) enact. Culturally, in Stiglitz's words, "globalization encompasses many things: the international flow of ideas and knowledge, the sharing of cultures, global civil society and global environmental movement" [Stiglitz 2006:4]

In practice, globalization is a ticket for corporations to move their operations in and out of countries and to outsource production for reducing labour costs. It refers to the opening of national territories to imports, investments and repatriation of profits as well as the diffusion of common consumer culture. Stereotypically, globalization is equated with the McWorld, namely the spread of McDonalds and CNN.

Although globalization is largely the diffusion of the Western (particularly American) ideas, practices and products in the Third World, but there is also some reverse flow from China, India and even Africa of food, music and entertainment. It is also, sometimes, credited with the spread of Jihadist ideology and human trafficking. All in all, globalization is an accelerated form of cultural diffusion that itself is historically one of the two fundamental processes of social change.

Not all is thought to be well with globalization. Certainly loud discontents are being voiced even in the USA and Europe, presumably the mother countries of free trade and globalization. A recent article in the establishment magazine, *Foreign Affairs*, raises the possibility that globalization may have passed its peak [(Abdel and Segal 2007)]. From the perspective of this paper, an assessment of the benefits and costs of globalization is not the focus. What I want to show is that globalization is another wrinkle on the on-going process of the spread of urbanism.

Globalization is modern and urban in contents. The ideas, activities, goods and services spreading globally not only carry urban practices and beliefs but also they initially enter a country through its major cities. Globally induced traits and functions settle on the top of the hierarchy of activities in a city. They are located in the fashionable parts of cities and command premier facilities and services. Thus they set a wave of polarization and differentiation in the structure of cities. As they are accommodated in the local culture, they begin to filter down to smaller cities, towns and even countryside. Examine, for example, the spread of Coca Cola, KFC or Internet in Pakistan, these activities began in Karachi, Lahore and then filtered down to Multan or Mund. Following a similar path, the nascent software industry has begun in big cities and it is beginning to filter down to second tier cities such as Islamabad, Peshawar. Each of these items remain the symbols of modernity and prestige compared to their indigenous counterparts. The point is that global influences are essentially a patch on urban cultures, injecting new modernist traits. This is undoubtedly the case in Pakistan.

Pakistan is weakly globalized .A recently constructed index of globalization, based on weighted values of items such as foreign investments, tariff rates, import barriers and social indicators such as international telephone traffic, number of internet users and McDonald restaurants etc, places Pakistan low on the scale, in the 40-60 range, compared to Canada, for example, at above 80 score [(Dreher 2006)].

The primary agency of globalization in Pakistan is its expatriate labour working in the Gulf countries and Europe, and immigrants in North America and Australia. Through them have come new consumer tastes, mass air travel, modern gadgets, dollars and even puritanical Islamic ideology from Saudi Arabia, Egypt, Iran and Taliban.

Other forces of globalization in Pakistan include international aid, advice and treaties, global NGOs and opening of the domestic markets to imports, investment

and currency trade. A case can also be made that almost 30 years of the spill over of Afghan wars has brought the world into Pakistan.

Altogether these global forces have realigned the social structure of Pakistan. A class of global professionals and businessmen has emerged whose fortunes are tied to external economic opportunities and who command premium earnings, not infrequently in dollars or equivalent rates. They have found a place among the economic elite and are setting examples of conspicuous consumption. What they spend on a dinner in five star restaurants of Karachi, Lahore or Islamabad is more than what their chauffeurs' families spend in a month. Such is the scale of social disparity arising from globalization. Of course their life style defines the aspirations of the emerging middle class. The new face of modernization in Pakistan has global route. Undoubtedly there is a veneer of prosperity in the cities of Pakistan attributable to globalization, but it is accompanied by increasing social disparity.

To conclude this discussion, it can be said that globalization is reinforcing the modernizing trends in Pakistan, both diversifying its economic base and sharpening the class polarization. Culturally, it is cast in urban parameters and builds up pressures for adoption of the urban norms and values. This functional requirement brings into bold relief the imbalance between agrarian rooted culture and the requisites of an urban- modern social organization. The following section delves into this issue.

Institutional Lags

A social institution is essentially a set of ideas, invested with the moral force, about the expected behaviours and beliefs in an area of life, be it family, economy, education, community or religion at the macro level or school, cricket team or cousin marriages at the micro level. In the sociological language, an institution is the script for organizing human actions in a particular aspect of living. The social change that has swept Pakistan has precipitated an unusual condition. The patterns of living have changed. The material base has been transformed and the economic organization has been realigned, both in modern-urban ways. Yet the script remains traditional, rooted in agrarian norms and values. This incoherence among different institutions as well as the division within institutions is the phenomenon of institutional lag. Norms and values of one institution are inconsistent with those of others or some elements of an institution are out of balance with the rest.

Three major fissures divide Pakistan's social institutions: 1) The material culture and technology have outstripped non-material beliefs, values and norms. 2) The private interests and kin loyalties trump public interests and collective well-being. 3) The lived culture has outgrown imagined culture. Let us take each of these divisions of Pakistani society and examine their contradictions.

The lag between the material and non-material aspects of Pakistan's cultures

Ogburn long ago defined the phenomenon of 'cultural lag' when elements of a culture that were once in agreement with each other change at different rates, thereby dissociating or misadjusting with each other [(Ogburn 1950)]. Usually material aspects change faster than beliefs and behaviours. This is what has happened in Pakistan.

The lag between material and non-material aspects of institutions is strikingly illustrated by the hazardous and wasteful traffic conditions on Pakistan's roads. The automobile has spread all across, but traffic regulations, their enforcement and particularly drivers' behaviours woefully lag behind. Buses, cars, motorbikes are prestigious possessions that are driven as symbols of honour and power, resulting in a continual one-up-man driving behaviour. Traffic signals are ignored, posted speeds are given scant attention and any opening in the road space invites drivers to muscle each other away. A western traveller observed that Pakistanis drive as if they are riding a horse. This lag of the moral underpinning of the modern modes of driving is exacting immeasurable toll of life, limbs and property for the whole society.

The disparity between the diffusion of the material and non-material cultural elements is reflected in almost all aspects of the social life and governance. TV, videos, hamburgers and even base ball caps or jeans, for example, have spread rapidly but family planning, punctuality, weight watching or mores of efficiency have not caught on as much, despite the persistent media campaigns. The lag of norms and values behind the material and technological advances is a divide that runs across Pakistani institutions.

Imbalance between private and public spheres

Social life is divided between the private sphere of individual, family and kin community, namely interests and actions that largely benefit or harm individuals and small groups on the one hand; and the public sphere of generalized interests, collective goods and common welfare of the community at large, on the other. Private interests are appropriable, divisible and largely marketable with little spill over effects, examples of such acts are establishing a family, building home, buying and selling, holding a job, playing games and sports, taking care of personal or family's health, falling in love etc Whereas public interests are indivisible, non appropriable and embedded in interlocking externalities, such as security, defence, water supply, air quality, trust, public health and good government etc.

An agrarian society has few collective goods and the preponderance of private and communal interests. As a society industrializes and modernizes, the individuals' actions interlock, agglomeration economies emerge and the welfare of everyone increasingly depends on the well being of all. This transformation parallels the shift

from rural to urban social order. Pakistan's economic development is also following this path. The need for collective goods is increasing and public interests are defining the quality of life.

Pakistan's development in the past six decades has tilted the balance between the private and public interests. Collective goods are scarce though they are direly needed as the economy and society urbanize. Private interests have proliferated without the corresponding ethical restraints. Witness the everyday phenomenon of housing estates of grand designs but lacking proper sewerage disposal or drainage systems. Garbage swept from homes pile on the streets outside, living up to the Galbraithian phrase 'private affluence and public squalor'.

Over time the private space of home has been secularized and equipped with modern comforts, at least among the middle and upper class households, but public space of streets, parks and the infrastructure is deficient, ill-maintained and neglected. Private clinics have multiplied, but sanitation and preventive medicine remain underdeveloped. Marraiges have become lavish affairs of big feasts and large dowries, while laws and morality restricting such extravaganzas remain dead letters.

Even the nature of property changes with development. Property in an agrarian order is largely self-contained and an endowment of nature. It is usually material and corporeal. Whereas the urban property is primarily the product of externalities and its impacts spill over to others. It is as much incorporeal as material.

With urbanization in Pakistan, the nature of property is changing and public dimensions are increasingly more important. Yet Pakistan's property system continues to be based on agrarian ideologies and rural notions of ownership. This imbalance between the private and public dimensions of the property is a source of the local fiscal crises, haphazard development and community impoverishment.

The imagined culture lagging behind the lived culture of institutions

Another fissure running through Pakistan's social institutions is the chasm between how people live and what they believe is their way of life. The former is the lived and the latter is the imagined culture. It is the difference between the reality of life patterns and the beliefs about the ways of living. This divide permeates almost all institutions, be it family, elder care, status of women or employment etc. It has widened as the lived life has been swept by modern-urban compulsions and the imagined life remains stuck to the traditional beliefs. A few examples will illustrate this divide.

Mobility has uprooted people from their traditional roles, activities and abodes. Millions live and work at places far off from where they grew up. Families and kin have been left behind. Elderly parents live alone while grown up children make homes in distant cities and countries. Lonely senior is a reality, but the beliefs about Pakistani elders' life hold that they live happily among caring children. Expatriate

Pakistanis live with the guilt of abandoned elderly as do those migrated to cities. Yet if asked to describe the life of seniors in Pakistani society, most Pakistanis are likely to paint a picture of well cared for elderly, slamming the West where ‘they are abandoned’. This chasm between the imagined and lived family life has not allowed new institutions of the eldercare to emerge that will conform to the lived realities.

Similar disparity exists regarding the lived life of women and their imagined roles. Economic pressures, functional requisites of modern living including having to shop, take children to schools or clinics, deal with public officials have impelled almost a majority of women to take responsibilities outside home. Yet the imagined life of women is that of domestic bliss behind the *Chardevari* (four walls). Islamists raise this belief to an ideal. Pakistani society has changed but its mental images of women’s daily life remain stuck in its bucolic past.

The structural condition revealed by this lag within institutions is that of lived life being transformed into modern parameters, while the imagined beliefs and norms continue to be mired in traditions.

Modernity and urban life

Institutional lags are indicators of Pakistan’s arrested social development. Undoubtedly the structure of society has changed, but cultural norms, values and beliefs as well as morals have not evolved in parallel. This incompatibility of the cultural and structural elements is contributing to the under development, disorder, corruption and inefficiency. A deliberate programme of social reforms and cultural development is needed in the contemporary Pakistan; a process that though continuous came in two major waves in the Western countries. First in the social legislation of the early 20th century and second in the urban reform movement of 1930s. The social legislation of 1860s in Germany and 1900s in Britain are examples of the first wave. The urban reform legislations in North America, the USA and Canada of 1930s, are the second wave.

What will be the scope of social reforms? To answer this question, we have to probe the requisites of urban living that has come to characterize Pakistan. The sociological literature has long maintained that the transformation from an agrarian-rural mode of production to an industrial-urban economy promotes a different social and moral order. Ibn Khuldun recognised the difference between the culture of a city and tribe as far back as the 14th century. Durkheim contrasted the rural social organization of mechanical (unity of similarities) solidarity with the urban community of organic (interdependence of the diverse) solidarity [(Durkheim 1893)]. Simmel pointed out that the cash economy of cities fosters individualism, blasé attitude and secondary relations. [(Simmel 1902)] Wirth’s essay, “urbanism as a way of life” is a seminal work on the culture of cities [(Wirth 1938)]. He linked the large size, high density and heterogeneity of population of cities to anonymity, impersonalization and segmentation of social relations in a city.

Although Wirth has been partially refuted by, in particular, experiences of ‘urban villagers’ and ethnic enclaves in the North American and European cities [(Rex and Moore 1967: Gans 1962)], not to mention the persistence of tribal, sectarian and caste communities in the Third World cities, yet the general direction of the cultural change from rural to urban societies are well captured by his formulation. That urban social life is relatively more formal, impersonal, based on rules and secondary relations is an experience observed universally. This line of reasoning has been incorporated in the theories of modernization.

Modernization is a process of social transformation whereby a society moves towards relatively more reliance on technology and science for production, division of labour and specialization, universalistic rather than particularistic modes of dealings, status based on educational and economic achievements rather than ascription on the basis of birth and family, social mobility, emphasis on rational decision making, formal institutions, communities of interest and values such as punctuality, efficiency and equality. I have not traced the evolution of the concept of modernization but summarized the near consensual set of its attributes. For a review of the theories of modernization see Lerner and Kumar [Lerner 1958: Kumar 1996].

The process of modernization is neither monolithic nor linear. It proceeds in circular ways; traditions are resilient adapting to new challenges through realignment. Their forms may change but functions and meanings remain in tact and vice versa. That is why Wallerstein maintains that “we are required to universalize our particulars and particularize our universals” [Wallerstein 2006:49]

Modernity must not be looked as a set of absolute characteristics, but as attributes of institutions that fall along a continuum of values. It takes different forms in different cultures, such as Russian or Japanese modernity is qualitatively different from the American modernism. Yet in each culture there is a discernable tendency towards the above listed attributes in the social, economic and political institutions.

I am aware of the post-modernist critiques of modernization and urbanization. They tend to raise epistemological objections to these notions. Recently environmental crisis has been blamed on the rise of modernity and urbanization. My argument is based on the demographic and technological drivers of these processes. I begin from the empirical fact that the world has more than six billion people and more are being added everyday. A majority of the world population now lives in cities. They are spinning out institutions of modernist attributes. Modernization has natural affinity with urbanization. The two processes end up producing a similar social order that has the same requisites to be effective.

Functional imperatives of modern-urban social order

The attributes of modern-urbanism exist as universal tendencies but the forms they take in a particular society is affected by its culture. For example urbanization stimulates mobility in occupational, educational and geographic terms. Yet in the

Western countries it uprooted women in large numbers to move to cities to work in factories and offices. The female secretary became the anchor of an office in Europe and North America. In the Third world, mobility is drawing young men away from villages who earn their living largely in informal sector and congregate in squatter settlements. The point is that mobility as a driving force unleashed by modernization and urbanization is universal but its expression varies according to the cultural norms and values. Similar examples can be cited about the forms taken by achievement – orientation, secondary relations, division of labour and other attributes of urbanism. The functions of these attributes are universal but the forms they take vary from society to society. What are the functional imperatives of urbanization? Let us examine those.

The functional imperatives of modern-urbanism can be categorized in four sets.

Collectivization (group based production) of utilities and services

Urbanization concentrates large number of people in a small area and pools their welfare. They may not be intimate or even overtly interact with each other but they are tied together through interdependencies of common services and interests. What is either not needed or provided privately in rural settings, be it water supply, waste disposal, street cleaning, security or transport, becomes largely a collective goods in urban milieu. Thresholds for the collective provisions of many goods and services are precipitated requiring public organizations, taxation, rules and regulations as well as bureaucracies. The need for collective goods is precipitated but they may not be provided. That is the situation in Pakistan.

Restructuring of property

Modernization and urbanization realign the nature of property. First they extend the rights of property to incorporeal objects such as patents, ideas, processes and objects. Second, externalities begin to affect the property rights and values, even in real estate. One site's use and value depends on what goes on the neighbouring properties, quality of neighbourhood, transport and access, zoning and infrastructure, all attributes originating from the actions of others and not from an owner's investments. Property in urban setting is one element in a system of interrelated uses, rules, facilities and services. The property market is encased in public laws, regulations and investments. A private property derives its value and use from streets, roads, traffic laws, drainage, water supply, police and other collective goods, mostly publicly provided. Flats carve property in the air rights requiring common ownership of stairs, roofs and equipment. Yet property laws and practices are largely based on rural land laws and *Patwar* system of administration. They do not have the sophistication to deal with modern problems of joint ownership, interdependent uses, reciprocity of collective and private rights and an equitable distribution of the property values. Similarly they offer little protection to owners of intellectual property. An agenda of urban property reforms await to be implemented in Pakistan.

Formal civic order

Customary laws and informal social control do not regulate urban life, which is not self-regulating but requires formal institutions such as a local government, bureaucracy, representation of public opinion, accountability, codified laws and regulations, police and judiciary etc. All of these institutions may bear imprints of a community's culture, but functionally they partake of some universal qualities. Again urbanization precipitates the need for such a civic order. In any city, an urban civic order may or may not exist in an effective form, but is direly needed. Pakistan has the shell of this order but it is inadequate structurally and ineffective functionally. Institutional lags have obstructed the emergence of an effective civic order of the urban provenance.

Urban culture and moral order

Urban living involves encountering, visually and interactionally, hundreds of persons, if not thousands, everyday. This calls for the modifications of everyday behaviours and gives rise to new forms of social relations and cultural norms and values. One cannot greet every body one sees in a street, as is often the case in villages. One has to learn to avert gaze despite recognizing a face, the proverbial blasé attitude. This is an example of how secondary relations, mutual trust without intimacy, impersonal dealings, formal norms and even punctuality are needed for the functioning of urban life. A new moral order with its own sense of right and wrong, including for example business ethics, underpins urban life. It has to be cultivated if it does not emerge sociologically. Rapid urbanization, as in Pakistan, results in the moral order not keeping up with changes in economic and spatial organizations. This is the situation in Pakistan, which requires a process of deliberate fostering of urban culture and moral order to promote social development.

The foregoing discussion points out that the institutional lags have inhibited the realization of the imperatives of urbanism in Pakistan. The persistence of agrarian mores and ideologies (feudal ways of the common parlance), the lived reality outpacing beliefs and perceptions, public interests overshadowing private concerns together have resulted in the ineffectiveness of the state and social and moral disparities in the society. Social development is lagging behind economic and material progress. Yet any agenda of reforms depends on the state as the agency for action. It has both to lead and to create space for social movements to fulfill the imperatives of the emerging modern-urban order. What could be the strategy for such development? I will conclude this article by briefly sketching the contours of such a strategy.

Strategy of deliberate urbanism

A deliberated attempt to promote modern-urban norms and practices is needed to overcome institutional lags. Myrdal recommended 'Improved attitudes and

institutions” for all countries of South Asia almost 50 years ago [Myrdal 1968: 60-2] Sen has recently examined the role of culture in development [(Sen 2004)]

Included among the norms and practices to be promoted are an emphasis on objectivity in public discourse and decision –making, a relative impersonalization of dealings through the rule of rules, particularly in the public realm, the guaranteeing of the freedom of expression within the bounds of moral and social values, transparency and accountability of the political and administrative authority, enforceable citizens’ rights and responsibilities and cultural values such as efficiency, equality, orderliness, integrity etc. This is the agenda of social reform.

The overall objective of such an agenda is to promote beliefs and behaviours that are functional in the emerging urban social order. This objective cannot be pursued by some feat of social engineering. It has to be realized by creating favourable social conditions in which modern ideas and values thrive. Ultimately it is the state that is the primary agency for fostering suitable conditions through social legislation, political ideologies, administrative practices and public education. That is why public policies and actions are at the centre of the strategy to promote desired norms and practices.

Following is a brief recap of policies and practices that are widely held to be the instruments of social development and change in modern societies.

Social legislation

Historically states and societies that were in transition from agrarian to urban-industrial order had enacted a raft of legislation establishing citizens’ rights, social security, old age pensions, child welfare measures and administrative reforms. Pakistan has been long in need of such legislation. Its social legislation may not include a comprehensive welfare provisions for lack of resources, but it has to institute wide ranging social reforms, such as a charter of citizens rights and responsibilities and enabling acts for child welfare, elder care, women’s rights, property reform, access to information, human rights, environmental protection and urban planning, for example. Not only such legislations have to be enacted but also they have to be enforced in fair and efficient manner. Undoubtedly this is a tall agenda, almost a wish list. Yet without such radical rebuilding of social institutions, both the state and the society will continue to be besieged by crises.

Systematizing collective goods

Urban ways of life precipitate the needs for collective goods and communal provision of service, such as water and sewerage, roads and public transport, public health, social welfare, emergency services and copy rights laws etc. Collective goods may be publicly produced or communally provided by private producers. One way or the other, they require a sophisticated and professional administration. Not all are hard infrastructural goods requiring public investments. Many collective goods are

soft in nature consisting of laws, regulations and programmes. They can be instituted with little financial resources, though a caring administration is a prerequisite. The provision of collective goods not only improves the quality of life, but also promotes awareness of common interests and a mind set of civic responsibility.

Creating space for community actions and social movements

Not all levers of social development lie in the public realm. Forging new norms and values and restructuring social institutions are processes shrouded in obscurity. When new situations arise, people improvise ways of dealing with them, building on their traditions and knowledge. Overtime through recurrent interactions, these improvisations are institutionalized into new values, norms and morals. Such social processes are also deliberately promoted in the form of community actions and social movements. Pakistan has witnessed many such community initiatives in its 60 years history, such as, VAID, Green Revolution, Islamic revival and women's rights movement that have catalyzed social change.

Public policies can facilitate or hinder community development and even social movements. A democratic system of governance, constitutional guarantees for the freedom of association and expression, legislations facilitating the formation of NGOs and CBOs as well as small public investments in community organizations and public interest advocacy are some of the tried instruments of promoting social reforms. The point is that social change is not an altogether mysterious and spontaneous process. It can be deliberated and planned even in the realm of civil society. Pakistan's agenda of institutional restructuring calls for unleashing people's energies for self-help and social reorganization.

These are some of the elements of a strategy to overcome institutional lags and realize an urban moral order in Pakistani society. Of course there is an overriding precondition for the fulfillment of this strategy. It assumes peace, order and good government, particularly a government that is fair, effective and responsive. The absence of this precondition is the big elephant in the room that I have not touched in this paper. Yet almost every measure discussed above potentially can contribute to the realization of a good government. The implementation of most of these measures will increase the effectiveness and fairness of the government. The issue of the quality of governance is a topic that continues to receive close attention from social commentators, journalists and researchers.

Also the agenda of modern -urban order comes into conflict with the orthodox wing of the Islamisation movement in Pakistan. That agenda certainly is different from what is now happening in the NWFP with the creeping Talibanization. The value- premises of the orthodox Islamic movements and the urban moral order are widely divergent. What path Pakistani society chooses depends on the outcome of the political and social struggle between the liberal-modern and orthodox Islamic

ideologies. This struggle is beyond the realm of social policy planning within which this paper has been conceived.

References

- Abdel, Rawi and Adam Segal 2007. 'Has globalization passed its peak?'. *Foreign Affairs*. Jan/Feb.
- Daily Jang web <http://www.jang-com.pk> March 16.
- Dreher, Anthony 2006. 'Does globalization affect growth? Empirical evidence from a new index'. *Applied Economics* 38(10).
- Durkheim, Emile 1893. reprinted 1984. 'The Division of Labour in Society'. (Trans. W. Hall). London: Macmillan.
- Gans, Herbert 1962. *The Urban Villagers*. New York: Free Press.
- Kumar, Krishna 1995. *From Post-Industrial to Post-Modern Society: New Theories of Contemporary World*. Oxford: Blackwell.
- Lerner, Daniel 1958. *The Passing of Traditional Society*. Glencoe: Free Press.
- Myrdal, Gunnar 1968. *Asian Drama* 1. New York: Pantheon
- The News web <http://www.news.jang.com.pk> Oct 28 2005.
- Ogburn, William 1950. *On Culture and Social Change*. Chicago: University Press.
- Qadeer, Mohammad 2006. *Pakistan-Social and Cultural Transformations in a Muslim Nation*. London: Routledge.
- Rex, John and Robert Moore 1967. 'Race, Community and Conflict: A Study of Sparkbrook'. Hammondswoth: Penguin.
- Sen, Amartya 2004. 'How does culture matter?' in *Culture and Public Opinion*. V. Rao and M. Walton (eds): 37-58. Stanford: University Press.
- Simmel, George 1964. 'The metropolis and mental life' in *The Sociology of George Simmel*. K. Wolff (ed) New York: Free Press.
- Stiglitz, Joseph 2006. *Making Globalization Work*. New York: Norton.
- Wirth, Louis 1938. 'Urbanism as a way of life'. *American Journal of Sociology* 44(1):1-24.

AURANGZEB SYED

CRITICAL METHODOLOGY IN POLICY ANALYSIS: CRITICAL REALIST APPROACH

Abstract

Most mainstream research in social science is dominated by positivist methodologies such as regression analysis and pays little attention to the larger philosophical considerations of knowledge, thus denying any space to critical analysis. This paper is a critique of the current positivist research methodology that dominates mainstream social research today. This paper is an attempt to develop a critical research methodology that researchers can use as an alternative to the positivist methodology that dominates mainstream social science research. In doing so, I follow a dialectical approach: I develop a critique of the inherent flaws of positivist social science methodology by exposing the reductionist scientism on which it stands, and its consequent inability to generate reliable social knowledge, while at the same time, I undertake the task of constructing a critical methodology framework by synthesizing the contributions of various critical theorists. This process leads to the development of a schema which systematically identifies and links the various ontological levels with their respective logically necessary epistemological practices. In this way, I hope to make explicit the connections between philosophy of science, critical social theory, research methodology¹, and substantive models that a researcher may employ to investigate social phenomena from a critical perspective.

Introduction

The knowledge of the social world that is produced by research directly depends upon the methodology employed, which in turn depends upon the particular philosophy of science the researcher adheres to. Contingently, the remedies and solutions to social problems that emerge from that knowledge either immanently constrain and limit human capacities to solve these problems, or else can empower them with emancipatory potential to do so. In this sense, it is triply important for researchers (and their audience) to be self-aware and explicit about the philosophy of science that they base their methodologies on.

However, unfortunately most mainstream research in social science is conducted with little or no attention given to these fundamental considerations. This is mainly due to the fact that the one particular philosophy of social science, namely logical positivism and its methodological corollary, methodological individualism, (and quantitative statistical research methods that these have spawned), have usurped for itself an undisputed hegemonic position in social science research. It is this hegemonic status of positivism that I intend to problematize firstly in the following:

And this is largely based on ‘critical realism’ the philosophy of science elaborated by the philosopher Roy Bhaskar. Deriving from critical realism both ontological and epistemological imperatives and their implications for social science research, I then explain a schema adapted from one developed by Keat and Urry that, in my view, is consistent with the imperatives of critical realism.

Finally, I present an exemplar for conducting research within critical paradigm by applying it to a specific area of policy research, namely Pakistan’s energy policy, with the purpose of clarifying and concretizing the types of questions that inevitably come to fore as a result of deploying critical methodology. These pivotally important questions and considerations cannot be expected to come to light if positivist methodology is used instead. The knowledge generated by these questions is what is, in my view, crucially necessary to create the possibility of emancipatory solutions. It is hoped that this article would contribute to discussions on further elaborating and developing critical methodology, and as a result, and encourage critical research in social sciences, especially policy analysis, so that their research projects could indicate solutions essential for human emancipation.

Limitations of Study

At the outset, I would like to point out what this paper is *not about*. It is not about three things: Firstly, it does not indulge in larger paradigmatic disputes within philosophy in general, or disputes within the philosophy of science in particular: Whenever I do so, the purpose is merely to retrieve and clarify ontological and epistemological imperatives of social scientific knowledge, and in the process critique positivist ontology/epistemology and confirms the suitability of critical realism as the proper philosophical basis of social science. Secondly, it is not about elaborating any specific substantive social theory but indicates which existing social theoretical paradigms conform to the assertions of critical realism: A researcher is free to deploy any one among many substantive critical theories that generally go under the rubric of historical materialist paradigm, but there is no *a priori* compulsion to be restricted to it. Lastly, while I reject (‘western’) empirically-driven research based on logical positivism and attempt to push for an authentic space for critical research in our institutions, I am not directly or indirectly arguing for either ‘indigenous forms of knowing and knowledge’ (or what I call ‘folk science’) but especially not, ‘intuitive’ or spiritual basis for knowledge: While I believe that the former can, subsequent to it being subjected to dialectical critique, potentially be a source of generating new and unique knowledge, the latter I am afraid clearly falls outside the pail of science.

Significance of Philosophy of Science and Methodology for Researchers

One may ask, why fuss over such matters which I have indicated above? Why not just go straight away out there, collect data and do statistical analysis? After all, is not what social science research is all about? And indeed, if one picks up a research

journal randomly, whether of sociology, or economics, or political science, chances are that not a single article would bother itself with questions of philosophy of science or its methodological underpinnings. This is so because most academics, researchers and their institutions consider these matters settled—that is settled in the favor of positivism or methodological individualism. And this view has been (and is) passed on to graduate students, generation by generation, who then repeat the cycle as they become professors and researchers. Needless to say that this is a satisfactory state of affairs for those who are, by and large, satisfied by the prevailing social conditions and are supportive of status quo. However, for those interested in emancipatory social theory, this is unacceptable. As Burrell and Morgan point out:

“Theorists who wish to develop ideas in these areas [other than positivist/functionalist paradigm] cannot afford to take a short cut. There is a real need for them to ground their perspective in the philosophical traditions from which it derives; to start from the first principles; to have the philosophical and sociological concerns by which the paradigm is defined at the forefront of their analysis; to develop a systematic and coherent perspective within the guidelines which each paradigm offers . . . (1979, p.397).”

Critique of Positivism and Methodological Individualism

It is well recognized that much of social science research in western universities and institutes, and consequently also in non-western world, continues to be dominated by methodological individualism (MI) or behavioralism as it is called by its proponents in the United States. But before I discuss behavioralism, it is necessary that I first bring into discussion positivism and its epistemology—the philosophy of science that MI/behavioralism is derived from.

Positivism, Scientific Method, and Natural Sciences

Positivism², adequately defined by the Oxford English dictionary, is:

“a philosophical system elaborated from the 1830s by the French thinker Auguste Comte (1798-1857), recognizing only observable phenomena and empirically verifiable scientific facts and laws, and rejecting inquiry into ultimate causes or origins as belonging to outmoded metaphysical or theological stages of thought; a humanistic religion based on this system. In later use: any of various philosophical systems or views based on an empiricist understanding of science, particularly those associated with the belief that every cognitively meaningful proposition can be scientifically verified or falsified, and that the (chief) function of philosophy is the analysis of the language used to express such propositions.”

The core of the positivist methodology is the scientific method, first developed by scholars in medieval Baghdad but which later spread to Europe during renaissance

and was further elaborated and refined there. Clearly, the scientific method, with the ‘experiment’ as its heart and dynamo, unrelentingly unbarred the causal relations of the natural world which lay hidden behind natural phenomena. The systematic application of the scientific method to the study of natural world yielded, and continues to yield massive knowledge about it: Undoubtedly, this has led to the greatest achievements of human civilization.

Reductionism and Scientism

The stunning success of the scientific method in natural sciences to discover causal relations invited the deceptive thought that it could also be applied to the study of societal and human issues, i.e., to social objects. Through the latter half of the nineteenth century and the entire twentieth century, mainstream professional scholars directly imported natural science methods and concepts and devised elaborate schemes to apply these to analyze and generate knowledge of social world creating a huge body of theories and knowledge regarding society and the social world, theories and knowledge which they christened as “scientific”. Thus, the 18th and 19th century political economy was partitioned into separate “sciences” of politics, sociology, economics, etc. but all based on the common foundations of methodological individualism. This borrowing of positivism and the experimental method of natural sciences was made possible by completely ignoring the crucial differences between the ontology of natural objects and social objects: the convenient assumption was made that the ontological reality of social objects was same as that of natural objects, and hence the epistemology of positivist science could be applied for their study as well³. This flawed assumption lies at the core of the dispute in social science between positivists and critical theorists, the latter accusing the former of committing the ontological error of *reductionism*, which is to equate the reality of social objects with natural objects and treat them essentially as the same, and epistemological error of *scientism*, which is to use the methods of studying natural objects for the study of social objects as well.

Below I develop the argument further by elaborating the ontological difference between natural objects and social objects and concomitantly show why methodological individualism cannot serve as the epistemology of social science. This I do largely on the basis of the critical realist philosophy of science which consists of general philosophical theory of *transcendental realism* and the special philosophy of social science, *critical naturalism* (Bhaskar, 1975, 1979, 1989, 1993). It may be pertinent to mention here that the critical realism is fundamentally at odds with positivism, the dominant paradigm in Western social sciences today.

Critical Realism

Transcendental Realism

The transcendental realist view of science is based on the fundamental proposition that objects of knowledge of the natural world have two distinct dimensions that

must always be kept apart: *intransitive* and the *transitive*. This distinction rests on the assertion that while on the one hand the production or creation of knowledge is essentially a social act, that "men in their social activity produce knowledge which is a social product much like any other, which is no more independent of its production and the men who produce it than motor cars, armchairs or books . . .," and on the other hand, "that knowledge is 'of' things which are not produced by men at all: the specific gravity of mercury, the process of electrolysis, the mechanism of light propagation. None of these 'objects of knowledge' depend upon human activity. If men ceased to exist . . .," these processes would still go on in nature "though ex hypothesi there would be no-one to know it" (Bhaskar, 1975, p.21).

Intransitive Objects of Knowledge The latter of the two dimensions mentioned above, viz, "that knowledge is 'of' things which are not produced by men at all," is called by Bhaskar the *intransitive objects of knowledge*. He states: "[I]n short . . . [these] . . . are in general invariant to our knowledge of them: they are the real things and structures, mechanisms and processes, events and possibilities of the world; and for the most part they are quite independent of us" (Bhaskar, 1975, p. 22). Among these would be actual natural objects such as stars, planets, minerals, human body, etc. as well as the *laws* that are operative in nature: law of gravity, thermodynamics, etc.

Natural sciences most commonly investigate and create knowledge of the intransitive objects of knowledge through the creation of *closed system* of experiment in which scientists are able to create or control patterns of natural events and their occurrences. However, ontologically, these patterns of events should not be confused with the causal laws which scientific inquiry helps to identify. Patterns of events are produced by the scientist during an experiment but the causal laws are not. According to Bhaskar (1989):

"What is so special about the pattern of events . . . [that scientists] deliberately produce under meticulously controlled conditions in the laboratory is that it enables them to identify the mode of operation of natural structures, mechanisms or processes which they do not produce. What distinguishes the phenomena the scientist *actually* produces from the totality of the phenomena she *could* produce is that, when her experiment is successful, it is an index of what she does *not* produce. A *real* distinction between the objects of experimental investigation, such as causal laws, and patterns of events is thus a condition of the intelligibility of experimental activity . . . The objects of experimental activity are not events and their conjunctions, but structures, generative mechanisms and the like (forming the real basis of causal laws), which are normally out of phase with the patterns of events which actually occur" (p.9).

While studying natural objects and their relationships in the closed system of an experiment, a scientist can create patterns of events and control their occurrences in a manner that are in "phase" with the causal laws, thus revealing, and confirm them. However, in the *open system* of the natural world "no constant conjunction of events

obtain." As the pattern of events in the open system is dynamic and ever-changing, being simultaneously determined by the operation of many and various causal laws, what obtains is that these patterns of events are "out of phase" with the underlying structures and mechanisms (which ground causal laws) that generate them. It is precisely for this reason that the closed system of the experiment is so important for the discovery of natural laws. However, no such heuristic device is possible for the study of social objects and their interrelationships as the social world is inherently an open system with no possibility of creating artificially closed situations.

To recapitulate the above discussion, the notion of the intransitive dimension asserts that the objects of human knowledge are real "things" that exist independently of the fact whether one has knowledge of these or not, that phenomena or patterns of events are produced by structures and generative mechanisms which ground causal laws, that reality is structured and differentiated, and that in the open system which obtains in the real world (outside of confines of controlled experiment) causal laws must be analyzed as tendencies which may or may not be realized due to the interference of other, and even contradictory causal laws: In other words, in the open system "there is an ontological gap between causal laws and their empirical grounds." (Bhaskar, 1989, p. 11). This is contrary to positivism which necessarily deduces causal laws by identifying empirical relationships between two observable variables whose values can be measured subsequently applying statistical techniques, especially regression analysis. This leads to the fatal error of confusing constant conjunction of events with causal laws, a stance which thus cannot accept that "just as a rule can be broken without being changed, so a natural mechanism may continue to endure, and the law it grounds be both applicable and true (that is, not falsified), though its effect (i.e. the consequent) be unrealized" (Bhaskar, 1989, p. 11).

Transitive Objects of Knowledge

As opposed to the intransitive objects of knowledge, the transitive objects of knowledge are the creation of human consciousness. This is the pre-existing knowledge in a discipline of knowledge which a researcher in that field confronts and has to know. As Bhaskar says, "They include the antecedently established facts and theories, paradigms and models, methods and techniques of inquiry available to a particular scientific school or worker" (1975, p. 21).

Based on the above two concepts of the objects of knowledge, Bhaskar builds his philosophy of science--transcendental realism--in opposition to (but not total rejection of) the principles of Humean "classical empiricism" and current day positivism (Popper, Hempel, and others) as well as the "hermeneutical tradition" (Dilthey, Simmel, Anscombe, Dray, Charles Taylor, Winch, Gadamer, Apel, Habermas, and others). Bhaskar summarizes "transcendental realism" in the following manner:

“It regards the objects of knowledge as the structures and mechanisms that generate phenomena; and the knowledge as produced in the social activity of science. These objects are neither phenomena (empiricism) nor human constructs imposed upon the phenomena (idealism), but real structures which endure and operate independently of our knowledge, our experience and the conditions which allow us access to them. Against empiricism, the objects of knowledge are structures, not events; against idealism, they are intransitive (in the sense defined [above]). On this conception, a constant conjunction of events is no more a necessary than it is a sufficient condition for the assumption of the operation of a causal law. According to this view, both knowledge and the world are structured, both are differentiated and changing . . . (1975, p. 25).”

Ontology of Social Objects and Their Epistemology

Critical Naturalism

The theory of *critical naturalism* advanced by Bhaskar (1989) recognizes that there are characteristic differences between natural phenomena and social phenomena, and that these differences extend to the underlying structures and mechanisms that generate phenomena in each case. These differences pivot around the fact that, as opposed to natural objects and phenomena, social objects and phenomena are *emergent*, that is, produced by the social activity of humans. According to Bhaskar (1989, p. 38), social structures are different from natural structures in the following important ways:

1. Social structures, unlike natural structures, do not exist independently of the activities they govern.
2. Social structures, unlike natural structures, do not exist independently of the agents' conceptions of what they are doing in their activity.
3. Social structures are only relatively autonomous from each other as the differentiation and development of social activities implies that they are interdependent.
4. Social structures, unlike natural structures, may only be relatively enduring. The tendencies they ground may not be applicable universally across time and space.

Given these important differences between social and natural structures, can one then say that it is possible to study the former by applying the general principles of the scientific method? In other words, can one treat social facts, structures, and societies as "real," as having an independent ontological status, and subject these to scientific investigation? Do they have an intransitive dimensions in spite of the assertion that these are emergent, that is, products of human social activity? A proper and correct resolution of this dilemma is essential if one is to avoid a

collapse into the methods of hermeneutics and phenomenology. What is equally crucial is that the emergent ontological status of social objects and phenomena be fully accounted for in order to avoid the error of scientism which positivist social science often makes⁴.

Social objects are thus real, even though their mode of existence is very different from that of natural objects. The mode of existence of the former is emergent, that is, a result of the activity of humans, while that of the latter is cosmic or given by nature, that is, fully independent of human existence. However, and this is a crucial point, because social objects are emergent and have the characteristics mentioned above, the method of their study must therefore be significantly different from that of natural sciences.

These differences fall into three categories which parallel the differences between social and natural objects: Ontological, relational, and epistemological. In the following, I will consider the implications of each of these differences for methodology.

Ontological Differences and Implications for Methodology

The emergent properties of social objects limit and necessitate methodology in certain important ways. The chief limitation results from the property of social objects that they not only cannot be empirically *identified independently* of their effects (a property which many natural objects have such as magnetic fields, etc.) but that they do not *exist independently* of their effects. This means that as "Society, as an object of inquiry, is necessarily 'theoretical' . . . it is necessarily unperceivable . . . so that it can only be known, not shown to exist." (Bhaskar, 1989, p. 45). This has major implications for the notions of validity and measurement in social sciences which will be discussed below.

Relational Character of Social Sciences and its Objects

Another important methodological implication that results from the emergent nature of the subject-matter of social sciences is the *relational character* between the two, viz. between social sciences and their subject matter. Unlike natural sciences, social sciences are *internally related* to their subject-matter in the sense that ". . . social sciences are a part of their own field of inquiry, in principle susceptible to explanation in terms of the concepts and laws of the explanatory theories they employ . . . and this necessitates a precision in the sense in which their objects of knowledge can be said to be 'intransitive'. For it is possible, and indeed likely, given the internal complexity and interdependence of social activities, that these objects may be causally affected by social science . . . Conversely, one would expect social science to be affected or conditioned by developments in what it patently cannot exist independently of, viz. the rest of society" (Bhaskar, 1989, p.47). This is the essence of the notion of *causal interdependency* between social sciences and their

subject-matter, and is in contrast to natural sciences where no such interdependency exists.

But it is crucially important to distinguish causal interdependency between social sciences and their subject matter and *existential intransitivity* of social objects, the latter being a pre-condition of science, without which no science, whether natural or social, is possible. Explaining this important difference, Bhaskar (1989) writes:

“For, although the processes of production may be interdependent [in the case of social science], once some object O_t exists, if it exists, however it has been produced, it constitutes a possible object of scientific investigation. And its existence (or not), and properties, are quite independent of the act or process of investigation of which it is a putative object, even though such an investigation, once initiated, may radically modify it. In short, the concept of existence is univocal: ‘being’ means the same in human as the natural world, even though the modes of being may radically differ. The human sciences, then, take intransitive objects like any other. But the categorical properties of such objects differ. And among the most important of these differences is the feature that they are themselves an aspect of, and causal agent in, what they seek to explain. It is vital to be clear about this point. For if it is the characteristic error of positivism to ignore (or play down) interdependency, it is the characteristic error of hermeneutics to dissolve intransitivity.” (p. 47)

Epistemological Differences between Natural and Social Sciences and Implications for Methodology

The vital epistemological feature that distinguishes the possibility of study of social from natural phenomena, and which thus determines the necessity for different methodologies for their respective sciences, is the fact that social phenomena "only ever manifest themselves in open systems; that is, in systems where invariant empirical regularities do not obtain. For social systems are not spontaneously, and cannot be experimentally, closed." (Bhaskar, 1989, p. 45). On the other hand, it is possible to set up a closed experiment in most cases in natural sciences, in which invariant empirical regularities can be produced by scientists thus making it possible for the discovery and analysis of inner structures and mechanisms (causal laws) that generate the empirical phenomena or the relations between different empirical phenomena in the natural world.

Closed Systems, Open Systems, and Methodological Implications

It is very important to keep in mind the ontological distinction between causal laws and the empirical regularities that are created by scientists in a closed system. Causal laws reflect the mode of operation of inner structures and mechanism of objects, which have a universal or transfactual application and are ontologically autonomous of humans, while empirical regularities created in a closed system are conjunctions

of events that are deliberately created through experimental manipulation. The significance of upholding this distinction can be appreciated by the fact that the real world is an open system in which no empirical regularities obtain but at the same time causal laws are in operation. For otherwise, one would have to accept the absurd notion that there are no causal laws and the natural world is comprised of totally accidental relationships.

“In open systems, causal laws can only be applied and understood as *tendencies* in the sense that it is not necessary that if "A" is considered to be an operative and correct causal law, that the effects "B" that law entails and explains, must then also appear as empirical reality. It is possible for "A" to be operative even though there is no appearance of "B". If the application of knowledge in open systems is to be at all intelligible, writes Bhaskar (1989, p. 9) "causal laws must be analyzed as the tendencies of things, which may be possessed unexercised and exercised unrealized, just as they may of course be realized unperceived (or undetected) by people. Thus in citing a law one is referring to the transfactual activity of mechanisms, that is, to their activity as such, not making a claim about actual outcome (which will in general be co-determined by the activity of other mechanism).”

The acceptance of the notion of open systems in place of closed systems has radical and far-reaching implications for social science methodologies, implications which have not been fully appreciated by mainstream social science theorists. This is evident from the fact that since Von Bertalanffy's arguments against closed systems, positivist social theorists almost ritually emphasize their acceptance of open systems, but, "despite the widely recognized deficiencies of the closed system as a theoretical construct in social science, the full implications of an open systems approach have not been pursued in any real depth. The concept has been adopted in a very partial and misleading way . . . confined to recognizing and emphasizing the environment as an influence upon the subject of study and reformulating traditional models in terms of systems concepts" (Burrell and Morgan, 1979, p.60).

In the following discussion, I shall discuss the true significance of open systems to theory-construction and methodology. To begin with, it should be noted that one of the most significant implications of the acceptance of open systems concept is that it makes untenable the application of all methodologies derived from natural sciences--which necessarily pre-suppose closed systems--to social sciences, which must necessarily investigate its objects of study in open systems, as shown above. Now, as Bhaskar writes:

“practically all the theories of orthodox philosophy of science, and the methodological directives they secrete, presuppose closed systems. Because of this, they are totally inapplicable in social sciences (which is not of course to say that the attempt cannot be made to apply them-to disastrous effect). Humean theories of causality and law, deductive-nomological and statistical models of explanation, inductivist theories of scientific development and

criteria of confirmation, Popperian theories of scientific rationality and criteria of falsification, together with hermeneutical contrasts parasitic upon them, must all be totally discarded. Social science need only consider them as objects of substantive explanation.” (1989, p. 45).

In a similar line of argument, Burrell and Morgan also note commonly overlooked incompatibility of open systems with putative methodologies. After pointing out that "it has become almost obligatory for social system theorists to decry the inadequacies of closed system theorizing" they write:

“Paradoxically, however, as a method of analysis the notion of closed system is still dominant in many areas of social enquiry. The use of controlled experiments and interview programmes, and the attempt to measure social phenomena through attitude questionnaires, all provide examples of closed system methodologies . . . The paradox is compounded by the fact that such closed system methodologies are often employed within the context of theoretical perspectives which emphasise the importance of an open systems approach. The link between theory and method is an extremely problematic one in many areas of social science.” (1979, p. 60).

Critical Realist Imperatives of Social Theoretical Model Building

So far I have discussed the critical implications of open systems to social science methodologies derived mainly from positivist social science. In the following, I shall focus on the real consequences of the acceptance of the notion of open systems to theoretical model building and identify methodological practices which may be said to be consistent with it. In doing so, I shall once again rely on the philosophical analysis done by Bhaskar in his book *The Possibility of Naturalism*. These consequences or imperatives are enumerated below.

1. A point of fundamental significance to theory or model building in social sciences is that, unlike the closed system experiment of natural sciences, in open systems it is in principle impossible to assemble conditions in which theories can be decisively tested. The profound implication of this is "that criteria for the rational development and replacement of theories in social science must be *explanatory and non-predictive*. (Particularly important here will be the capacity of a theory (or research programme) to be developed in a non-ad hoc way so as to situate, and preferably explain, without strain, a possibility once (and perhaps even before) it is realized, when it could never, given the openness of the social world, have predicted it.)" (Bhaskar, 1989, pp. 45-46). In other words, social science theories and models can only be validated on the basis of their explanatory power. Therefore, all attempts to attribute predictive power to social science theories are ill-founded as, in open systems given the simultaneous operation of numerous other interfering factors, these cannot be assumed to possess any predictive capability. Consequently, hypothesis regarding the structures and mechanisms that

underlie and generate phenomena "can be tested quite empirically, although not necessarily quantitatively, and albeit exclusively in terms of . . . [their] explanatory power." (Bhaskar, 1989, p. 49).

2. Due to the historical-transformative character of its subject-matter and the irreversibility of social processes, while measuring phenomena, social science theory must be competent to deal with not only quantitative change but also qualitative ones. Thus, along with meaningful quantitative measurement of social phenomena, keen attention has to be given to the occurrence of qualitative changes, which after they occur, would thus make initial indexes of quantitative measurements redundant and inapplicable.
3. Quantitative measurement in social science has only partial relevance and has to be supplemented by discourse based on the use of language. This is due to the concept-dependent aspect of the ontology of the subject-matter of social science (see the above discussion on emergent properties of social objects). Many of the most important concepts cannot be measured, only their meanings understood and "hypotheses about them must be expressed in language, and confirmed in dialogue. Language here stands to the conceptual aspect of social science as geometry stands to physics. And precision in meaning now assumes the place of accuracy in measurement as the a posteriori arbiter of theory." (Bhaskar, 1989, p. 46).
4. Because of the openness of social systems, and the fact that the subject-matter of social sciences is continuously developing and changing (including inherent possibilities of qualitative changes), that is, it has a historical-transformative character, social theory will always remain necessarily incomplete. This means that all forms of historicism, which entail deductive predictability, cannot be plausible or scientific.

Critical Realist Research Methodology

After demonstrating the inappropriateness of the use of positivist methodology to the study of society, and its over-extended use of empirical inquiry that is inherent to methodological individualism, and as well as laying down the ontological and epistemological imperatives of critical theory or model building, I will now sketch out the imperatives of critical realist methodology and define the proper place of empirical inquiry within it. In doing so, I largely rely on the work of Keat and Urry who have, in my view, made an important contribution to critical realist methodology by sketching out the connections between multiple levels of inquiry which represent respectively the different levels of ontological depth that Bhaskar points to.

Critical Realist Methodology in Social Science

The pivotal principle of the critical realist view is that the process of comprehension or knowledge production must move, at any one level, from the analysis of phenomena to an analysis of the mechanisms and structures that generate the phenomena. But is this principle also applicable to the domain of social sciences? How can one approach this issue without committing the errors of reductionism (which denies any ontological difference between natural and social objects, reducing the latter to the former) or scientism (which denies that there are any significant differences in the methods appropriate for the study of the two, whether they are ontologically reducible or not)?

The purpose of science is to lay bare the structures and mechanisms that produce the empirically evident phenomena, both in the natural and social domains. Although there are real differences between these domains, (and this has epistemological or methodological but no ontological significance as shall be explained below in the section on Critical Naturalism), in both cases the process of production of scientific knowledge is essentially similar. Bhaskar explains this process as follows:

Typically, then, the construction of an explanation for, that is, the production of the knowledge of the mechanism of the production of, some identified phenomenon will involve the building of a model, utilizing such cognitive materials and operating under the control of something like a logic of analogy and metaphor, of a mechanism which if it were to exist and act in the postulated way would account for the phenomenon in question (a movement of thought which may be styled retroduction). The reality of the postulated explanation must then, of course, be subjected to empirical scrutiny. (For, in general, more than one explanation will be consistent with the phenomenon explained.) Once this is done, the explanation must then in principle itself be explained. And so one has in science a three-phase schema of development in which, in a continuing dialectic, science identifies a phenomenon (or range of phenomenon), constructs explanations for it and empirically tests its explanations, leading to the identification of generative mechanisms at work, which now becomes the phenomenon to be explained, and so on. In this continuing process, as deeper levels or strata of reality are successively unfolded, science must construct and test its explanations with the cognitive resources and physical tools at its disposal, which in this process are themselves progressively transformed, modified, and refined. . .

Knowledge of deeper levels may correct as well as explain, knowledge of more superficial ones. In fact one finds in science a characteristic pattern of description, explanation and redescription of the phenomena identified at any one level of reality. But only a concept of *ontological depth* (depending upon the concept of real strata apart from our knowledge of strata) enables

us to reconcile the twin aspects of scientific development, viz. growth and change (1989, pp. 12-13).

Keat and Urry Schematic

Keat and Urry outline three such functions in the "Postscript to the Second Edition" of their book *Social Science as Theory* (1981):

- (a) to provide evidence of what is to be explained--the explicandum (for example the distribution of different categories of housing (private/public, owned/rented, etc.));
- (b) to provide evidence *for* the blocking of, or the partial, or the full realization of, the causal powers of a particular entity (for example, of the spread of capitalist social relations in Third World economies, as given by the various indicators of commodification, wage-labour, monetized relationships, etc.);
- (c) to provide evidence that a particular entity is providing certain conditions which are necessary *for* the partial/full realization of the powers of some other entity (for example, of the increased range of activities of the state, which are in part necessary for the further realization of the powers of the CMP [capitalist mode of production]). (p. 248).

Keat and Urry (1981, p. 248) also represent their ideas in a useful schema that summarizes in a simplified form, the connection between the various levels of theory and the type of scientific practice in realist social scientific practice. This schema is reproduced below with some necessary formal modifications in text.

LEVELS OF THEORY	RESULTING SCIENTIFIC PRACTICE
I. General ontological and trans-historical claims	Almost entirely philosophical/methodological--e.g. general nature of the social world, possibility and limits of a social science, etc.
II. Theoretical descriptions of specific entities and of their potential causal powers (most such entities will be historically specific)	Mostly conceptual/theoretical. Empirical evidence mainly pertinent through the evidence on III, IV, and V feeding back to this level.

III.	Theoretical descriptions of how the causal powers of different entities are/are not realized and how these do/do not provide conditions of each other.	Theoretical debate informed by...[evidence of full/partial blocking or full/partial realization of causal powers of entities, and evidence supporting the influence of entities on others in providing conditions for the full/partial realization/blocking of their powers.
IV.	Descriptions of mechanisms which generate empirical events	Guided by III, empirical evidence of full/partial blocking or full/partial realization of causal powers of entities, and evidence supporting the influence of entities on others in providing conditions for the full/partial realization or blocking of their powers.
V.	Explanation of empirical events	Theoretical and empirical work to show the explicandum as the 'unity of diverse aspects'

Multi-Level Analytical Framework for Policy Analysis

From the preceding discussion on critical naturalism and Keat and Urry's schema presented above, one can delineate the full scope of policy analysis. It includes four dimensions (a) investigation of a particular issue or problem in relationship to political, economic, and social factors (level II). Theories at this level are, for example, such as those put forward by Cardoso (1979), Evans (1979), Petras (1982, 1992), Wallerstein (1987), etc.; (b) identification and description of governmental policy pertaining to that issue or problem (level V). Theories at this level are, for example, such as those put forward in the book by Holloway and Piccotto (1978), Poulantzas (1973, 1975); (c) investigation of how policies or their modification come into being and what social groups these cater to (level III). An example at this level is Lindberg, et al (1975): and (d) evaluation of the effectiveness of policies in addressing the relevant issues or amelioration of social problems the understanding of which has been structured by the three preceding levels, and what social effects or changes were brought about in society (levels III, IV, and V). This is the level where empirical research efforts need to be focused and new knowledge of the social forces produced by the researcher. This is indeed the task of critical policy analysis.

The task of policy analysis is thus very broad. In this task, the analyst has to deal with numerous social entities and the complex interaction between these within an open system. Among these entities, and their inter-relations, that are necessarily involved as objects of study of policy analysis are the State and its institutions, Government and the political system, the Economy and Social structure, i.e., relations between social classes or groups of people with similar or opposing interests, the administrative system, etc. Further, these social entities and the affects of their inter-relations on the

problem(s) at hand must be studied within a specific cultural and historical context, for, as mentioned above, the space-time dimension is one of the important properties of social objects.

The undertaking of such a task would be forbidding, if not impossible, without adopting some starting point, some a priori way of relating social entities and attaching cause-effect directions to these relationships. In other words, a priori theoretical framework is necessary not only for making sense of facts and data pertaining to intransitive social entities, that is, dealing with the empirical level, but, and this is of even greater importance, it is necessary for identifying what kind of social entities and what kind of relations between these may be of significance from the point of view of creating valid knowledge and therefore must be investigated, as opposed to others which may be excluded from study. Simultaneously, it must be kept in mind that the theoretical framework, or the particular way in which information regarding the intransitive is combined with the transitive dimension to produce a meaningful account of public policy (just as in other areas of social science), is contingent on the philosophy of science or paradigm (in the sense used by Burrell and Morgan (1979)) that the analyst subscribes to.

An Exemplar: Analyzing Pakistan's Energy Policy

I will now provide an example of how to construct a specific analytical framework for the analysis of Pakistan's energy policy. This outline example is merely to show how to concretize a research framework on the basis of critical realist philosophy of science in general, and specifically on the basis of the analytical schema provided by Keat and Urry (1981). It is simply an exemplar, an exercise to practically demonstrate how to proceed on the path of critical research. I believe that the logic of the development of the example discussed below can be readily adapted to the study of other areas of society.

Let us say that the object of study of our study is to understand and analyze the changes in the energy policy in Pakistan in the 1980s. At a general abstract level, two interrelated dimensions that comprise this subject can be identified: The nature and development of the energy sector, and government policies designed to affect it. Manifestly, the first dimension is part of the dynamics of the Economy and the second, that of the dynamics of the State. These two categories of society thus form the primary objects of analysis for us.

Now, both the Economy and the State in Pakistan (and other countries belonging to the South) are recognized to suffer from "underdevelopment" or aberrant development and are part of the larger problem of development. Further, the problem of development involves not just the developing country but also the developed world. More precisely, since the current world economy evolved and was forged of during the long period of mercantilism, colonialism, and later capitalism, the developed as well as the under-developed worlds emerged as a result of the same historical forces—these are but the two sides of the same coin. Thus an

understanding of either during any relevant historical period would immanently involve paying attention to the *nature of relations* between the two. In literature, the problematic underlying this relationship is captured by numerous terms such as core-periphery, satellite-metropolis, North-South, Third World-First World, developing countries-developed countries, primary producers-industrial producers, backward-advanced countries, underdeveloped-developed countries, etc. Thus, this relationship forms another dimension that is important to our analysis.

So far I have identified three broad dimensions—Economy, State, and Core-Periphery relations—as integral to our object of study. This approach to policy analysis is more or less in agreement with that propounded by Minogue:

“what governments do' embraces the whole of social, economic and political life, either in practice or potentially. Public policy is self-evidently not a narrow field of enquiry, though policy analysts may well focus only on narrow areas of the broad field. Public policies do things to economies and societies, so that ultimately any satisfactory theory of public policy must also explain the interrelations between the state, politics, economy, and society (Quoted by Ham and Hill, 1984, p. 17).”

Ham and Hill endorse Minogue's view of policy analysis (but correctly point out that "economies and societies 'do things' to policies as well as vice versa" p. 17) and they further add:

“It follows that policy analysis should give due consideration to the social, political, and economic contexts within which problems are tackled. It also follows that the student of policy process should stand back from the world of everyday politics in order to ask some of the bigger questions about the role of the state in contemporary society and the distribution of power between different social groups. Unless this is done then policy analysis must remain at best a partial exercise. (p. 17).”

From the critical realist point of view, it is imperative to situate the analysis of a particular policy within the context of political economy and its history. This necessitates the use of substantive theories that can help us to make sense of the virtually limitless events and facts that can reasonably be considered to be a part of any given policy area, for instance, as in our case, the energy sector's development and policies pertaining to it. Theories also tell us how, and in what ways, particular events and/or facts can be said to relate to each other, so that one is able to give an adequate and intelligible account, as well as an explanation, of the phenomena under study. Furthermore, it is only by using a substantive theory, which identifies entities and their relations that are relevant to the problem at hand, that one is able to select (or ignore) social entities worthy of theoretical/empirical analysis from among numerous such entities. It is the analyst's crucial task to pick and choose theories that conform to the ontological and epistemological underpinnings of critical realism and which would provide adequate account of the substantive problem that

is analyzed. The scope of this paper does not allow for a discussion of the substantive theories of energy sector development and I shall leave this for another paper. But for now, I return to a further elaboration of critical realist methodology, the main focus of the current paper.

Now, as mentioned above, our explicandum, i.e., Pakistan's energy policy, can and ought to be analyzed, following Keat and Urry's schema of five levels of theory and the resulting scientific practice, and given the paradigm (in Kuhn's (1970) usage of the term) of dependent development, at the following levels:

1. Philosophical discussion on the questions of ontology and epistemology in social sciences, as has been done above.
2. Discussion regarding theoretical conceptualization of historically specific systems, for example, a theory of the dynamics of the world capitalist system. Specifically, the focus should be on the quintessential conceptualization of the economic system, namely, the mode of production (and reproduction), and concepts of economic surplus, and mechanisms of its appropriation and utilization such as "terms of trade," "capital flows," "investments", etc.
3. This level of analysis would include conceptual/theoretical discussion regarding the phenomenal effects of underlying mechanisms and structures of a specific economic system--the world capitalist system in our case--on a particular society, the historical phases of the development of these effects, the separation and integration of the world into core and peripheral areas, and the historical relations between these two. This level would also include an analysis of class relations in a peripheral society, the congruence or incongruence of interests of dominant national and international classes, the State and its role in economic development, markets and their functions, and the nature of dependent development. Discussion at this level is informed by concepts and explanatory power of the "new" dependency school represented by authors such as Cardoso, Petras, O'Donnell, and Evans (So, 1990).
4. Analysis at this level would involve, *inter alia* a discussion of the consequences of dependent development on energy resources development and utilization; the role of foreign energy firms in the energy sector; the access to modern technology; the position of foreign energy firms viz-a-viz the State/national government; the position of upper classes/factions/families viz-a-viz the institutions of the State.
5. Empirical description and analysis of the various facets of the energy policies and sector including their histories. This would involve two areas: First, The role of domestic factors and international factors in shaping the development of the energy sector such as, availability of domestic funds and foreign capital, availability of energy resources, domestic science and engineering capacity, etc. Second, description and analysis of the governmental energy policies including how these are formulated and implemented, and the institutions responsible for doing so.

Conclusion

The critical realist philosophy of science consists of the general philosophical theory of science and the special philosophy of social science. Those objects of the natural world that are not produced by men are independent of us. We can investigate and create knowledge of these natural objects of knowledge and reveal natural laws through the creation of a pattern of natural events in the closed system of experiment.

The special philosophy of social science, the theory of critical naturalism, as advanced by Bhaskar (1989) recognizes that there are characteristic differences between natural phenomena and social phenomena. While the natural objects and laws exist independently of scientific inquiry the social sciences are internally related to their subject matter and are a part of their own field of inquiry. Social systems are not spontaneously, and cannot be experimentally, closed. Because of the open nature of the social system the causal laws can only be applied and understood as tendencies. Thus social science theories and models can only be validated on the basis of their explanatory power and, therefore, social science theory must be competent to deal with not only quantitative change but also qualitative ones.

The commonly employed quantitative techniques in mainstream social sciences that have spawned by positivism, such as regression analysis, are inappropriate to the study of social forces and issues as these have a reality is that is fundamentally different from that of natural objects. Social objects are always changing, show a high degree of interdependence on each other and on the larger framework in which they are embedded, and therefore do not lend themselves to quantitative measurements in a reductionist framework. Social reality is emergent and dynamic, critical naturalism tells us: it is like a 'movie,' not a 'snap shot'. What positivist methodology gives us at best is a 'snap shot' picture of 'here and now' observable reality: It is not capable of exposing the underlying laws of social change and hence is unable to capture the key dynamics of a social world that is constitutively multi-layered, dialectically interactive, and in constant flux.

In order to understand our ever-changing social world and the forces operative within it, research methodologies based on critical naturalism are clearly superior from the scientific point of view. Critical naturalism makes two crucial assertions: 1) social reality is 'structured'; 2) social reality is 'multi-layered'. Social science methodology must be able to account for both of these dimensions. I have shown above how Keat and Urry's framework, that I assert 'fits' very well with Bhaskar's critical naturalism, helps us to conceptualize these two dimensions and thereby move our analysis of social reality step-by-step to more concrete levels (less abstract 'layers'). This is done by using the general social theory of historical materialism or the Marxist paradigm. And as we consider a particular social question, such as the analysis of a particular public policy, it becomes imperative to situate the discussion in the context of political economy and its history. Here, we must take the help of substantive theories (for example, dependency, world-systems, imperialism, etc.)

which can help us to: 1) select from and structure virtually limitless events and facts that can be reasonably identified to be operative in any given policy area (reflecting the underlying social laws) in a manner that reflects the objectively existing structural, class basis of society; 2) Situate the factors that we consider within a historical context.

Finally, in order to concretely explain the critical approach to policy analysis to the reader, I used the example of Pakistan's energy sector and show, how we can identify and answer key questions in this area. My intention in doing so was to provide 'clues' or discussion points to researchers interested in other policy areas, as well as to encourage them. It is hoped that this example is helpful to them in the development of their research frameworks.

Notes

¹ C. Wright Mills aptly remarked a long time ago that " 'Method' has to do, first of all, with how to ask and answer questions with some assurance that the answers are more or less durable" and further: "To have mastered 'method' and 'theory' is to have become a self-conscious thinker, a man at work and aware of the assumptions and the implications of whatever he is about" (1959, p.120).

² As example an of general presentation of positivist methodology see K.R. Popper, *Objective Knowledge: A Evolutionary Approach* (1972) and *Logic of Scientific Discovery* (1974). For positivist methodology in policy analysis see T.R. Dye, *Understanding Public Policy* (1992), C.K. McKenna, *Quantitative Methods for Public Decision Making* (1980), and E.S. Quade, *Analysis for Public Decisions* (1989).

³ "The tendency in much empirical research has been for methodologies to dominate other assumptions in relation to the ontological, epistemological, and human nature strands of our analytical scheme. The wholesale incorporation of methods and techniques taken directly from the natural sciences needs to be severely questioned. The problem of developing methods appropriate to the nature of the phenomena to be studied remains one of the most pressing issues within the whole realm of social science research" (Burrell and Morgan, 1979, p.399).

⁴ According to Bhaskar, a realist ontological status of social facts, structures and relations can be clarified following Durkheim's (1964) two-fold approach. He first establishes the objectivity or autonomy of social objects by employing the criterion of externality, that is, the fact that social objects pre-exist individuals in the sense that individuals are born into a society that already is comprised of particular social facts, structures, and relations, means that the latter exist outside of them. Thus social objects (once these are produced through human activity) are external and independent of people even though these are produced exclusively through their activity.

Second, by applying the same criterion of externality to human activities, Durkheim asserts that because social objects affect what people are able or not able to do, and in their doing of things face the constraints imposed by social facts, structures and relations, further establishes the reality of social objects.

References

- Alavi, Hamza 1982. 'The Structure of Peripheral Capitalism' in *Introduction to the Sociology of "Developing Societies"*. Hamza Alavi and Teodor Shanin (eds). New York: Monthly Review Press.
- Benton, Ted 1977. *Philosophical Foundations of the Three Sociologies*. London: Routledge & Kegan Paul.
- Bhaskar, Roy 1975. *A Realist Theory of Science*. Leeds: Leeds Books.
- Bhaskar, Roy 1979. *The Possibility of Naturalism: A Philosophical Critique of Contemporary Human Sciences* (2nd ed.). N.Y: Harvester Wheatsheaf.
- Bhaskar, Roy 1989. *Reclaiming Reality: A Critical Introduction to Contemporary Philosophy*. London: Verso.
- Bhaskar, Roy 1993. *Dialectic: The Pulse of Freedom*. N.Y: Verso.
- Burrell, Gibson and Gareth Morgan 1979. *Sociological Paradigms and Organizational Analysis*. Portsmouth, New Hampshire: Heinemann Educational Books, Inc.
- Cardoso, F. H. and Enzo Falleto 1979. *Dependency and development in Latin America*. Berkeley: University of California Press.
- Dye, T. R. 1992. *Understanding Public Policy* (7th ed.). Englewood Cliffs, N.J: Prentice-Hall.
- Evans, P. B. 1979. *Dependent development: The alliance of multinational, state, and local capital in Brazil*. Princeton, N.J: Princeton University Press.
- Evans, P. B., D. Rueschemeyer, & E. H. Stephens 1985 (eds). *State versus markets in the world-system*. Beverly Hills, CA: Sage.
- Ham, Christopher and Michael Hill 1984. *The Policy Process in Modern Capitalist State*. Brighton, U.K: Wheatsheaf Books.
- Holloway, J. & S. Piccotto 1978. *State and Capital: A Marxist Debate*. London: Edward Arnold.
- Keat, R. & J. Urry 1975. *Social Theory as Science* (2nd ed.). London: Routledge & Kegan Paul.
- Lindberg, Leon., et. al. (eds). 1975. *Stress and contradiction in modern capitalism: Public policy and the theory of the state*. Lexington books.
- Manheim, Jarol B. & Richard C. Rich 1991. *Empirical Political Analysis: Research Methods in Political Science*. N.Y.: Longman.
- McKenna, Christopher K. 1980. *Quantitative Methods for Public Decision Making*. N.Y.: McGraw-Hill.
- O'Donnell, G. 1988. *Bureaucratic Authoritarianism: Argentina, 1966-1973, in Comparative Perspective*. Berkeley: University of California Press.
- Petras, J. F. 1982. 'Dependency and World-System Theory: A Critique and New Directions' in Ronald H. Chilcote (ed.) *Dependency and Marxism: Toward a Resolution of the Debate*: 148-155. Boulder, CO: Westview Press.
- Petras, J. F. 1992. *Latin America in the Time of Cholera: Electoral Politics, Market Economics, and Permanent Crisis*. N.Y.: Routledge.
- Popper, K. R. 1972. *Objective Knowledge: An Evolutionary Approach*. Oxford University Press.
- Popper, K. R. 1974. *Logic of Scientific Discovery*. Radius Books.
- Poulantzas, Nicos 1973. English trans. *Political Power and Social Classes*. London: New

Left Books. First published 1968.

- Poulantzas, Nicos 1975. *Classes in Contemporary Capitalism*. London: New Left Books.
- Quade, E. S. 1989. *Analysis for Public Decisions* (revised edition by Grace M. Carter). N.Y.: North-Holland.
- So, Alvin Y. 1990. *Social Change and Development: Modernization, Dependency and World-System Theories*. London: Sage.
- Wallerstein, Immanuel 1987. 'World-System Analysis'. In Giddens, A. & Turner, J. H. (eds). *Social Theory Today*. Stanford: Stanford University Press.

MUNEER AHMAD

STATE OF THE UNION SOCIAL AUDIT OF GOVERNANCE IN UC BHANGALI 2007

Abstract

This article seeks to ascertain the impact of devolution on the everyday life of the residents of Union Council Bhangali. Information is based primarily on a sample survey of the population. Limited knowledge of and interaction of residents with the union council administration shows that the union council does not play a pivotal role in the lives of the people. No significant improvement in the delivery of public services such as maintenance of public streets, drains, streetlights, garbage collection and disposal is reported. Provision of medical and educational services, supply of electricity and of drinking water, not the responsibility of union administration were reported to be relatively satisfactory.

One of the important questions that interests the students of good governance in Pakistan is to find out what difference devolution of power at the local level has made to the daily lives of the ordinary people. In order to find an answer to this question we decided to conduct a social audit of governance in union council Bhangali (see Annexure I). For this purpose we undertook a sample survey of the union council. A questionnaire was designed, a representative sample was chosen (see Annexure II), and the survey was conducted with the help of a team of experienced professional interviewers in February 2007. This paper attempts briefly to present the main findings of the survey.

The findings, on the whole, are not very favourable. The Union Administration does not appear to be very relevant to the daily lives of the residents. A very large proportion of residents of the Union Council do not know about the location of the Union Office, have not visited the Union Office and have not tried to contact a member of the Union Council for any assistance. Over ninety per cent of the respondents had not heard of citizen community boards. As to public services, a very large proportion expressed dissatisfaction with the delivery of public services. This was the case with the pavement of streets, the construction of drains, installation of streetlights, maintenance of roads, provision of transportation facilities, garbage collection and disposal, supervision of the work of sanitary workers, supply of piped drinking water, supply of cooking gas, provision of medical facilities, provision of schools for boys and girls, the police service, court system and general development work in the area. The findings roughly follow the same pattern as reflected in the National Social Audit of Governance and Delivery

of Public Services in Pakistan conducted by CIET in 2004-05 hereinafter cited as NSA-05.

Knowledge about the UC Administration

In response to the question whether the respondents knew the name or the serial number of their Union Council 149 out of 267 respondents or 55.8 per cent replied in the negative (Table 1-all statistical table are given in Annexure-III). Lack of such elementary information was far greater among women than men. Whereas 30 per cent of the men did not know the name or number of their Union Council, 88 per cent of the women suffered from such disability.

The respondents were next asked if they had ever visited the office of the Union Council. Only 36 or 13.5 per cent replied in the affirmative. Over eighty-six per cent of the respondents had never visited the office of their Union Council (Table I). Here again women were far less likely to visit the Union Council Office (8 out of 118 or 6.8 per cent) than men (28 out of 149 or 18.8 per cent). Out of the 36 respondents who ever visited the Union Council Office 23 or 63.8 per cent went there mainly to get birth certificate. The reasons of visit for the remaining 13 respondents are given in Table II.

The respondents were also asked if they knew the location of the Union Council Office. Over 58 per cent (157 out of 267) knew the location of the Union Council Office (Table I). This includes the 36 respondents who ever visited the Union Council office. Around 40 per cent (108 out of 267) did not know the location of the Union Council office. Of the 108 who did not know the location of the Union Council Office, 26 were men and 82 were women.

Only 49 respondents (18.4 per cent) tried to contact a member of the Union Council for any assistance (Table I). In thirty-three cases the purpose of the contact was to get a birth, death or *nikah* (marriage) certificate. In eight cases the contact was for repair to a public street or drain. The tendency to contact Union Council for a service was far less in case of women. Of the 49 respondents making a contact 42 were men and 7 were women. In all the 49 cases the contact was sought with a male Union Councilor. In no case, not even by women respondents, contact was sought with a woman Union Councilor. According to NSA-05 24.3 per cent of the respondents in the Punjab reported a household contact with a union council member in the last one year. Nearly 98 per cent of the contacts were with male councilors.

Opinion about Delivery of Public Services

Public Streets

To the question whether soling of public streets was undertaken by the Union Council during the last four years 191 or 71.5 per cent of the respondents replied

“not at all” (Table III). Fifty-five or 20.6 per cent of the respondents said soling of streets was undertaken ‘to some extent.’ Only 21 respondents or 7.9 per cent of the total replied that soling of public streets was undertaken to ‘a large extent’.

Public Drains

Similarly dismal was the response to the question whether new public drains were constructed in the Union Council during the last five years. As many as 197 or 73.8 per cent of the respondents said “not at all”. Fifty-one or 19.1 per cent replied “to some extent” and 19 or 7.1 per cent answered ‘to a large extent’ (Table III).

Street Lights

According to the replies of the respondents hardly any new street lights were installed in the Union Council during the last five years. Two hundred and thirty-six or over 88 per cent of the respondents answered ‘not at all’ to the question whether new street lights were installed during the last five years. Only 31 or 11.6 per cent of the respondents replied ‘to some extent’ (Table III).

Encroachments

The respondents were also asked if encroachments had been controlled in the Union Council during the last five years. One hundred and ninety-one or 71.5 per cent of the respondents said their area had no encroachments. Sixty-two or 23.2 per cent said encroachments had not been controlled at all. Twelve respondents (4.5 per cent) said encroachments had been controlled to some extent. Only two or 0.7 per cent said encroachments had been controlled to a large extent (Table III). Encroachments are predominantly an urban problem. Bhangali Union Council being largely rural in character appears to be relatively free of this nuisance. Wherever this problem exists, similar to urban areas, the Union Administration does not seem to be effective in controlling it.

Public Roads

One hundred and sixty-two residents or 60.7 per cent were of the opinion that roads in the Union Council were in a worse state than before. Sixty-one or 22.8 per cent said the roads were in the same state as before. Forty or 15.0 per cent felt they were in a better condition than previously (Table IV). In 2005 49.4 per cent of the respondents in the Punjab were dissatisfied with public roads.(CIET 2005)

Transport System

The residents of Union Council Bhangali seem to be dissatisfied with the transport system in the area. One hundred and twenty or 44.9 per cent characterized transport system as worse than before, 83 or 31.1 per cent as ‘same as before’ and 62 or 23.2

per cent as better than before (Table IV). The area has no public transport system. Transport service is provided entirely by the private sector. Some of the modes of transport are: auto rickshaw, bus and tonga. Some of the transport related difficulties identified by the residents are: bad roads, over crowding in buses, long distance to bus/rickshaw stop especially for women. In NSA-05 29.5 per cent of the respondents were dissatisfied with the public transport system.

Garbage Disposal

Two hundred and twenty-eight persons or 85.4 percent felt that no garbage disposal system in fact existed. Twelve residents or 4.5 per cent said garbage disposal arrangement was worse than before, another 12 residents felt it was the same as previously. Only 14 or 5.2 per cent of the residents felt that garbage disposal system was better than previously (Table IV). The main reason for poor garbage disposal was stated to be that sanitary workers did not work regularly (58.1 per cent) or that sanitary workers had not been assigned to work in the area (9.7 per cent). In 2005 64.8 per cent of the respondents in the Punjab said they had no government garbage removal service available to them.

How often sanitary workers come to your village

One hundred and eight-seven or 70.0 per cent of the respondents stated that sanitary workers did not come 'at all' for sanitary work. Sixty-five residents or 24.3 per cent stated that sanitary workers came for sanitary work once in a month. Only 3.4 percent of the residents stated that sanitary workers came once a week (Table IV).

The sanitary workers are hired and paid by the City District Government Lahore (CDGL). They are allocated for work to each Union Council. The number of such workers assigned to Union Council Bhangali is eighteen. Their immediate hierarchical superior is called Darogha who reports to the Union Council Nazim as well as to a Sanitary Inspector. This arrangement suffers from a weak sense of accountability on the part of the sanitary workers. The villages in the Union Council Bhangali are scattered over wide area. Waste water flows through open drains to open spaces or ponds. Sanitary work does not include sweeping the largely dirt streets. It consists mainly of removing slush from the open drains and throwing it in the streets near the open drains. It may at times be carted away to a few skips provided by CDGL in wheel barrows if available. Sanitary workers usually lack necessary equipment. It is no wonder that complaints against sanitary workers are common.

Drinking Water

None of the villages of Union Council Bhangali is provided with piped drinking water from a tubewell. Practically, all the residents make use of some private source of water supply. One hundred and sixty-seven or 62.5 per cent of the residents stated that they used a donkey pump to get drinking water. Sixty-three residents or 23.6 per cent used an electric turbine to supply themselves with water. In other

words 86 per cent of the residents used an electric motor to draw water from the ground. Twenty-four or 9.0 per cent of the residents used a hand pump to draw water (Table V). Two hundred and three or 76.0 per cent of residents seemed to be satisfied with the quality of water. Forty-two or 15.8 per cent of the residents complained that water had a bad taste, was muddy, was polluted by waste water from the septic tanks or needed to be filtered.

Cooking Gas

The entire area covered by Union Council Bhangali is not provided with piped cooking gas. In some villages (such as Nathoke), thanks to the efforts of the local MNA, gas pipes have been laid but gas connection has not yet been provided by the gas company. Three persons 1.1 per cent complained that the local MPA had not shown interest in the matter, nine residents or 3.4 per cent felt that the Nazim of the Union Council had failed to follow up the case energetically. One hundred and ninety-one or 71.5 per cent of the respondents felt that the gas company and the government assigned low priority to the rural areas (Table VI).

Electricity

One hundred and six respondents or 39.7 per cent were of the view that supply of electricity was better than previously. One hundred and forty or 52.4 per cent said that the supply of electricity in the area was “the same as before”. Only twenty or 7.5 per cent felt that it was ‘worse than previously’ (Table IV). The reason for dissatisfaction seems to be frequent power failures and power fluctuation due to increased use in the area of electric and electronic appliances such as electric motors, air conditioners, refrigerators, washing machines and the like.

Medical Facilities

In response to the question who would you contact in case of illness, 216 or 80.9 per cent of the respondents said they would go to a private physician. Only 51 or 19.1 per cent would go to a government, medical facility (Table VII). As to the amount of physician’s consultancy fee 66 or 24.6 per cent paid up to ten rupees, 18 or 6.8 per cent paid between 11 and 20 rupees, 64 or 24.3 per cent paid between 21 and 40 rupees, 84 or 31.5 per cent paid between 41 and 100 rupees, 15 or 5.6 per cent paid between 101 and 300 rupees and 7 or 2.7 per cent paid between 301 and 500 rupees (Table VIII). Forty three or 87.8 per cent of those who visited a government medical facility felt that the physicians were qualified. Forty-four or 89.8 per cent said that government medical facilities provided free medicines. Forty-three or 87.8 per cent of the residents who visited government medical facilities felt that the attitude of the staff at the facility was fair. Only 6 or 12.2 per cent described their attitude as bad (Table IX).

In 2005 17.8 per cent of the households in the Punjab usually used government health facilities. This proportion marked a decrease from 23.6 percent in 2001-2. NSA-05

also noted that 39.3 per cent of the households usually used unqualified health practitioners. The NSA-05 also quoted focus groups to explain why people, especially poor people, would be attracted towards unqualified practitioners. They explained that unqualified practitioners cost less, they prescribe inexpensive medicines, they are easily accessible even for home visits and usually the treatment from unqualified practitioners was effective. These elements may partly explain why a large majority of Bhangali households like to patronize private practitioners in spite of the fact that conditions in government health facilities were reported to be good.

Opinion about Government Schools for Boys and Girls

Out of 267 respondents 4 had no sons and 66 had no sons of school going age (Table X). Out of the remaining one hundred and ninety-seven 123 or 62.4 per cent sent their boys to government schools, 66 or 33.5 per cent to private schools and one or 0.5 per cent to a traditional school. Only 7 or 3.6 per cent did not send their sons to any school. Eighty five or 32 per cent of the respondents preferred government schools because they had no tuition fee or were relatively inexpensive. Twenty-nine or 10.9 per cent liked to send their sons to government school, because they were near their residences. Forty-five or 16.9 per cent of the respondents said that the quality of education in the government school was not good. Three or 1.1 per cent of the residents said that the number of teachers in the government schools was not adequate (Table XI).

Out of 267 respondents 4 had no daughters and 88 had no daughters of school going age (Table XII). Out of the remaining one hundred and seventy-five 93 or 53.1 per cent sent their daughters to government schools, 69 or 39.4 per cent to private schools and 2 or 1.1 per cent to a traditional school. Only 10 or 5.7 per cent of the respondents did not send their daughters to any school. Fifty-five or 20.6 per cent preferred to send their daughters to government schools because they did not charge any tuition fee. Thirty or 11.2 per cent preferred government schools for their daughters because they were near their residences. Thirty-nine or 14.6 per cent of the respondents felt that the quality of education in government schools was not good (Table XIII).

In response to the question whether the number of school going girls has increased in the area 153 or 57.3 per cent said “to a large extent”, 87 or 32.6 per cent said “to some extent” and 21 or 7.9 per cent said ‘not at all’ (Table XIV). Fifty-one or 19.1 per cent of the respondents were ‘extremely satisfied’ with the performance of government schools, 113 or 42.3 per cent were “somewhat satisfied” with their performance and 83 or 31.1 per cent were ‘not at all satisfied’ with the government schools (Table XV).

In 2005 41.6 per cent of all the 5-9 year old children in the Punjab were enrolled in government schools. According to NSA-05 girls, children from vulnerable households and children from rural households were more likely to be enrolled in a government school. The two top reasons offered by parents for sending children to a government school were ease of access and low cost.

Opinion about Police

In case of a problem of personal security 47.9 per cent of the respondents would rely on their own resources. They would not approach the police nor any one else. It reflects a considerable amount of lack of confidence in the police. Only 34.1 per cent of the residents said they would contact police for a problem of personal security. 18 per cent of the residents said they would contact someone other than police (Table XVI). In 2005, 24.9 per cent of the households in the Punjab said they would contact police for a problem of personal security.

If a resident had a complaint against a police official only 25.5 per cent would approach a senior police officer, 8.6 per cent would approach no body, 3.0 per cent would approach District Public Safety Commission and 47.5 per cent would approach UC Nazim or UC member (Table XVII). In 2005 22.5 per cent of the respondents nationwide would approach a senior police officer if they had a complaint against a police official.

Only 23 residents (8.6 per cent) approached the police department during the last two years (Table XVIII-A). In 87 per cent of the cases the respondent or a relative approached the police while in the remaining cases the police contacted the respondent (Table XVIII-B). In 43.5 per cent of the cases the attitude of police towards the respondent was fair (Table XVIII-C). Eight of 23 respondents (34.6 per cent) had contacted the police in order to file a complaint regarding theft, robbery or illegal occupation of land (Table XVIII-D). In 2005, only 10.9 per cent of the respondents in the Punjab actually established contact with the police.

Opinion about Courts

Although 166 or 62.2 per cent of the respondents felt that courts in Pakistan exist in order to provide relief to the people, twelve or 4.5 per cent felt that courts did not provide relief. 89 or 33.3 per cent of the residents were unable to offer any opinion (Table XIX-A). 250 or 93.6 per cent of the respondents had not approached any court of law for relief during the last two years. Only 17 or 6.4 per cent of the residents had approached a court during the last two years (Table XIX-B). Twelve or 75.0 per cent of these residents had found the court contact to be completely unsatisfactory or satisfactory 'to some extent' (Table XIX-C). In 2005 71.4 per cent of the respondents in the Punjab thought the courts were there to help people, 7.8 per cent reported a court contact within the last two years and 44 per cent were dissatisfied with the court contact.

Opinion about New Development Schemes

261 of the respondents (97.8 per cent) felt that new schemes focused on women development had not been introduced in the Union Council during the last four years. Only 5 (1.8 per cent) felt that some schemes of women development had been introduced such as interest-free loans, appointment of a lady health visitor in

the area, setting up of a handicrafts school. 237 or 88.7 per cent of the respondents stated that during the last four years the number of development schemes (in general) undertaken in the area was 'the same as before' or 'less than before'. Only 27 or 10.1 per cent felt that the number of development schemes was greater than previously (Table XX).

Opinion about the New Local Government System on the whole

As many as 121 or 45.3 per cent of the respondents were not able to say, whether the new local government system was better or worse than the previous system. Only 48 or 18.0 per cent felt it was better than the previous system. 40 or 15 per cent felt it was worse than the previous system and 58 or 21.7 per cent said it was the same as before (Table XXI). In 2005, nationwide, 26.9 per cent of the respondents 'did not know' whether the new local government system was better than the previous system, 30.5 per cent said it was better, 17.7 per cent felt it was worse and 24.8 per cent felt it was 'same as before'.

Opinion about Social Capital

262 or 98.1 per cent of the respondents were not members of any voluntary self-help group. Only 4, all men or 1.5 per cent claimed to be members of a voluntary group. None of them were, however, able to give the name of the voluntary group (Table XXII-A). One hundred and sixty-eight or 62.9 per cent of the respondents stated that people of their community, in general, tended to come to the help of one another. Only 27 or 10.1 per cent replied in the negative. Sixty-seven or 25.1 per cent were unable 'to say anything' (Table XXII-B). One hundred and eighty-four residents or 68.9 per cent would not report a case of corruption to any one. Only 81 or 30.3 would (Table XXII-C). About one-third of these 81 would report to UC Nazim, the same proportion to the police, 11.1 per cent to a Union Councilor and the same per cent to an influential person of the area (Table XXII-D).

In 2005 2.4 per cent of the respondents in the Punjab reported a male member in a voluntary group, 0.8 per cent reported a female member. 75.9 per cent of the respondents in the Punjab said that people in their community were ready to help each other. In 2005 58 per cent of the respondents nationwide would report if they came to know about a case of corruption, 54.8 per cent of the male respondents in the Punjab would report.

General Profile of the Respondents

One hundred and sixteen or 43.4 per cent of the respondents are housewives. Forty-five or 16.9 per cent are cultivators of one kind or the other. Thirty-six or 13.4 per cent are labourers. Twenty-seven or 10.5 per cent are shopkeepers (Table XXIII). One hundred and thirteen or 42.3 per cent are illiterate. Fifty-eight or 21.7 per cent have literacy up to primary school level. Forty-nine or 18.4 per cent are under-

matric. Forty or 15.0 per cent have had education up to B.A. Only 7 or 2.6 have studied to BA level or above (Table XXIV).

In terms of income 131 or 49.1 per cent belong to lower class. One hundred and twenty-five or 46.8 per cent may be described as belonging to the middle class. Only 11 or 4.1 per cent belong to the upper class (Table XXV).

Two hundred and forty-nine or 93.3 per cent live in a self-owned house (Table XXVI). Two hundred and fifty-three or 94.8 per cent have lived in the Union Council for five or more years (Table XXVII). One hundred and eight-four or 68.9 per cent of the residents are registered voters. One hundred and seventy-two or 64.4 per cent of the respondents actually cast vote in the last local government elections (2005). One hundred and seventy-four or 65.2 per cent possess computerized national identity card (Table XXVIII). Twenty-six out of 93 who do not have identity card faced one difficulty or the other relating to the working procedure of NADRA.

Possession of Household Appliances

Two hundred and eighteen or 81.6 per cent of the households possess a TV set. One hundred and forty-six or 54.7 per cent of the respondents possess refrigerator. One hundred and three or 38.6 per cent own a motor cycle. Only 15 or 5.6 per cent of the residents own a motor car. (Table XXIX).

Conclusions

Five years after the introduction of the new system of local government more than half of the respondents did not know the name of their Union Council. Around 40 per cent of the respondents did not know the location of the Union Council Office. Only 13.6 per cent of the respondents (or a relative) had ever visited the office of the Union Council during the last one year. Only 18.4 per cent of the respondents had ever tried to contact the Union Council or a Councilor to obtain a service. In light of these observations it is perhaps right to infer that Union Council has failed to emerge as an institution pivotal to the lives of the people.

Thirty-nine per cent of the residents would rely on their own resources if they needed a public service or facility for their area. 17.6 per cent of the respondents would approach some influential person of the area including MNA or MPA. Only 18.0 per cent of the residents feel that the new local government system is better than the previous system. Almost 96 per cent of the respondents did not know anything about the citizen community boards.

Over 71 per cent of the respondents felt that public streets had not been paved or repaired. Over 73 per cent of the residents expressed dissatisfaction with the construction and maintenance of public drains. Over 88 per cent of the respondents said that 'street lights' had not been installed in their area. Over 60 per cent of the people stated that public roads in the area were in a worse condition than before.

Forty-five per cent of the people said that transportation system was in a worse condition than previously. Over 85 per cent of the residents feel that no system exists for garbage collection and disposal. Seventy per cent of the respondents said that sanitary workers did not come for sanitary work. Drinking water does not seem to be a major problem for a large majority of the residents. About 16 per cent of the residents would prefer to get piped drinking water from an overhead tank. Most of the residents would welcome piped cooking gas supply. Government medical facilities do exist and are relatively inexpensive but their quality leaves much to be desired. That may explain why 81 per cent of the respondents prefer to visit a private physician for medical care. All the villages in Union Council Bhangali are provided with government primary schools both for boys and girls. Government schools do not charge any tuition fee and provide free textbooks. They are also located relatively close to the residences of the pupils. Thus sixty-two per cent of the boys visit government primary schools. Similarly 53 per cent of the girls went to government primary schools.

Bhangali Union Council is spread over a number of large and small villages surrounding the major village of Bhangali. Originally rural in character, this area has acquired many features of urbanised style of life over the years. Electricity is available to almost all in the entire Union Council. Electronic goods like TV and fridge are used by a large proportion of the population. Electric motors are used by almost every one to draw water from the ground. Nearly two-fifths of the residents own a motor cycle. Bus transport is easily available on the main public road that passes through the Union Council. Almost every village has a government primary school for boys and a separate school for girls. The area has access to both government and private health facilities. During the last few years four state-of-the-art high schools for boys and girls have been established in the Union Council by a private welfare foundation.

However, socially, the residents have not become as modern as they have in material aspects. For example, the tradition of forming voluntary self-help organizations is not well-developed. Social capital is also under developed. Political and non-political leaders that have emerged over time have devoted all their energies to extracting maximum favours and facilities from the government than on mobilizing local community resources to deal with local needs and problems. Local politics has tended to be dominated by rivalry between influential families. For example, elections to the Provincial Assembly (PA-158) and the National Assembly (NA-130) have almost always turned out to be contests between the Ghurkis and the Dayals. Under the pre-devolution political system, leadership to local communities in Bhangali was provided by members of the Provincial and National Assemblies and by the member of District/Zilla Council elected from this area. To be fair to this political elite, it discharged its leadership responsibilities not badly. Their main failing seems to be excessive dependence on government bounty and inability to mobilize financial and other community resources to meet some of the pressing civic needs.

The government primary schools have fallen on bad days. Many of them have no electricity. In many government primary schools there is no provision of drinking water. The hand pumps installed for water have often been vandalized. In many the wooden frames of doors or windows or ventilators have been ripped apart and pilfered away. What is dismaying is that the local leaders seem to be apathetic to this sorry state of affairs. One reason for their apathy could be that, over time, the well-to-do parents have tended to send their children to 'fancy' private schools. It is only the children of the very poor residents who come to government primary schools. They seem to lack any clout to 'voice' their grievances effectively. The school councils, though truly representative in the sense that they are composed of members drawn from the weaker sections of society, have failed to show any improvement in the management of government primary schools both for boys and girls. (In the period preceding general elections 2008, many government primary schools especially for girls were provided many missing facilities like electricity, ceiling fans, water and toilets).

The local communities and their leaders have taken no initiative to tackle the perennial and festering problem of garbage collection and garbage disposal. This problem could have lent itself to be addressed ideally by establishing citizen community boards introduced under the new local government system for the voluntary mobilization of human and financial resources of the community. In the first four years only one citizen community board was set up in Union Council Bhangali which failed to show any performance whatsoever. The Union Council, as an institution, failed to provide any leadership in this regard. In fact, it hindered the formation and operation of citizen community boards by not allocating the mandatory 25 per cent of the annual budget for citizen community boards. As the provincial government failed to frame and notify the rules of business for the constitution of Musalihat Anjumans (Conciliation Courts) neither the Union Council nor the community showed any interest by putting pressure on the government or taking initiative itself to constitute Union Council level conciliation courts. People, in general, showed lack of confidence in the Union Council as a body to settle petty disputes through conciliation. When asked if the residents had ever approached the Union Council (instead of a court) for solving a legal problem over 93 per cent replied 'no'.

On the positive side, the residents of Union Council Bhangali have in the past donated a large tract of land for the construction of the local Rural Health Centre. Similarly, more recently, they have donated large chunks of land for the four schools constructed by The Citizens Foundation, a private welfare organization. The local MNA facilitated the registration of the local residents with the National Database and Registration Authority (NADRA) for the purpose of their national computerized identity cards. A mobile team of NADRA visited the office of the Union Council for a number of days and received applications for computerized identity cards. This saved the relatively poor local residents the inconvenience and expense of visits to the somewhat distant regional office of NADRA.

We may conclude by saying that both in the past as well as after devolution, local leaders have tended to focus on extracting material benefits from the government for the local residents. There is, now, a need to shift the emphasis on inculcating new social habits of mobilizing the resources of the community itself and building social institutions, such as conciliation courts and citizen community boards. This shift will, hopefully, introduce a substantive qualitative change in the life of the people and provide social and institutional base for achieving the essential goals of the philosophy of devolution of power and responsibility.

References

CIET 2005. *Social audit of governance and delivery of public services: Pakistan 2004/05*. National Report Islamabad: Community, Information, Empowerment and Transparency (CIET).

Social Audit

Social audit refers to a new form of service delivery survey. It is based on a combination of sample survey and discussion of survey findings in focus groups of the surveyed community. The central idea in this new type of survey is to take account of the views and experiences of citizens, especially the poor, for whom public services have actually been designed. This is because only the users themselves can judge whether service delivery is making a difference to their lives. It helps in interpreting the survey data and in finding solutions to community problems.

Social audit was introduced in Pakistan by CIET (Community Information Empowerment and Transparency, an international group of professionals from a variety of disciplines who bring scientific research methods to community levels). CIET conducted the first national social audit in Pakistan for 2001-02 and the second for 2004-05. More national social audits, were planned (but for some reason have not been conducted) in order to compare over time the citizens' views, use and experience of public services under devolved local government.

The social audit of Bhangali is primarily based on a sample survey. Instead of organizing focus groups continuous discussions with key informants and day-to-day observations of life in the Union Council were used for contextual information.

Sampling Methodology

Union Council Bhangali had 17097 registered voters for the Local Government Election 2005. We were able to get, from the Election Commission of Pakistan, a list of UC Bhangali voters disaggregated according to villages and for each village according to gender.

A representative sample size was determined with overall 5% error margin (d) and level of significance (α) of 10% using the relationship:

$$n = \frac{Nz^2p(1-p)}{Nd^2 + z^2p(1-p)}$$

(William G. Cochran (1977), Sampling Techniques (*Third Edition*), John Wiley and Sons, Inc.)

Mostly, the parameters to be estimated were proportions. No prior estimate of p was available so we selected $p = 0.5$ giving $p(1-p) = 0.25$, a maximum quantity, $z = 1.645$ at $\alpha = 0.10$ and $N=17097$, population size.

Random Sampling is a self weighting procedure giving proportionate weight to every segment of the population. A proportionate sample was randomly selected consisting of 149 males and 118 females comprising a total of 267 respondents. Final proportionate sample distribution among villages is as follows:

Village	Males	Females	Total
Bhangali	27	22	49
Burj	7	4	11
Mandian Wala	17	14	31
Nathoke	28	20	48
Padri	14	12	26
Phularwan	17	12	29
Dograi Khurd	5	4	9
Hirasingh Wala	2	1	3
Tera	11	9	20
Dhuri	4	4	8
Klassmari	7	6	13
Rakh Padri	4	4	8
Rehman Pura	6	6	12
Total	149	118	267

(assistance and advice of Centre of Statistics, LSE, is gratefully acknowledged)

Statistical Tables

Table I
Contact of Residents with Union Council

Question	Yes%	No%
(1) Knows name of UC	44.2	55.8
(2-A) Ever visited UC Office	13.5	86.5
(2-C) Knows location of UC Office	58.8	40.4
(3) Ever contacted a Union Councilor	18.4	81.6

Table II
(Q2-B) Reasons for visiting UC Office

Reason	Per cent
For Birth/Nikah Certificate	63.9
For settlement of a dispute	5.6
For making computerized national ID card	2.8
To complain about drain maintenance	8.3
For training	5.6
For getting financial help	2.6
For some personal work	11.1

N = 36

Table III
Opinion of Residents about Delivery of Public Services

Question	To a large extent	To some extent	Not at all
(16-A) Soling of streets done	7.9	20.6	71.5
(17-A) New drains constructed	7.1	19.1	73.8
(18-A) New street lights installed	0.0	11.6	88.4
(19-A) Encroachments removed*	0.7	4.5	23.2

* 71.5 percent of the respondents stated that the area had no encroachments

Table IV
Opinion of Residents about Delivery of Public Services

Question	Better	Same	Worse
(20-A) Are roads better than before	15.0	22.8	60.7
(21-A) Is transport better than before	23.2	31.1	44.9
(22-A) Is garbage disposal better than before*	5.2	4.5	4.5
(28-A) Is electricity supply better than before	39.7	52.4	7.5
(22-C) How often sanitary workers come	Once a week 3.4	Once a month 24.3	Not at all 70.4

* 85.4 per cent of the respondents stated that there was no system of garbage disposal.

Table V
(Q24-A) Alternative Arrangements for Drinking Water

Source	Per cent
Donkey pump	62.5
Turbine	23.6
Hand pump	9.0
No response	4.9

Table VI
(Q27-B) Reasons for Non-supply of Piped Cooking Gas

Reason	Per cent
Authorities show no interest in rural areas	71.5
MPA showed no interest	1.1
UC Nazim did not fulfill promise	3.4
Miscellaneous	22.1
No response	1.9

Table VII
(Q29-A) Who would residents contact in case of illness?

Response	Per cent
Government medical facility	19.1
Private doctor	80.9

Table VIII
(Q29-B) Average Medical Fee paid per Visit for Consultancy

Average fee	Per cent
Upto 10 rupees	24.6
11 to 20 rupees	6.8
21 to 40 rupees	24.3
41 to 100 rupees	31.5
101 to 300 rupees	5.6
301 to 500 rupees	2.7
No response	4.5

Table IX
Opinion about Government Medical Facilities

Question	Yes	No
(Q30) Are qualified doctors available in government hospitals	87.8	12.2
(Q31) Are free medicines available in government hospitals	89.8	10.2
(Q32) Attitude of staff at government medical facility is fair	87.8	12.2

Table X
(Q33-A) Where do your sons go for education?

Response	Number	Per cent
Not of school going age	66	24.7
No son	4	1.5
Do not go to any school	7	2.6
Traditional school	1	0.4
Government school	123	46.1
Private school	66	24.7

Table XI
(Q33-B) Opinion about Government Schools for Boys

Response	Per cent
No fee	31.9
Government school is near home	10.9
Education not good in government schools	16.9
Education in government schools Ok	1.1
Shortage of teachers in government schools	1.1
Miscellaneous (including NR)	12.3
Not of schooling going age/no sons	25.8

Table XII
(Q34-A) Where do your daughters go for education?

Response	Number	Per cent
Not of school going age	88	33.0
No daughters	4	1.5
Do not go to any school	10	3.7
Traditional school	2	0.7
Government school	93	34.8
Private school	69	25.8
No response	1	0.4

Table XIII
(Q34-B) Opinion about Government Schools for Girls

Response	Per cent
No fee	20.6
Government school is near home	11.2
Education is not good in government schools	14.6
Education in government school Ok	1.9
Government school is far away	1.9
Miscellaneous	15.3
Not of school going age/no daughters	34.5

Table XIV
(Q35) Has number of school going girls increased in the area?

Response	Per cent
To a large extent	57.3
To some extent	32.6
Not at all	7.9
No response	2.2

Table XV
(Q36) Level of Satisfaction with Performance of Government Schools

Response	Per cent
Extremely satisfied	19.1
Somewhat satisfied	42.3
Not at all satisfied	31.1
No response	7.4

Table XVI

(Q37) For problem of personal security whom would you contact?

Response	Per cent
No one	47.9
Police	34.1
Some one other than police	18.0

Table XVII

(Q38) Who would you contact in case of any complaint against the police?

Response	Per cent
UC Nazim	41.9
UC Member	5.6
Senior Police Officer	25.5
District Public Safety Commission	3.0
No one	8.6
No response	15.3

Table XVIII-A

Opinion about Police

(Q39) Did respondent contact Police during last two years?

Response	Per cent
Yes	8.6
No	91.4

Table XVIII-B

(Q40) Who started contact with Police?

Response	Per cent
Household	87.0
Police	13.0

Table XVIII-C
(Q41) Nature of Police attitude towards respondent

Response	Per cent
Fair	43.5
Bad	56.5

Table XVIII-D
(Q42) Contacted Police for what type of problem

Response	Per cent
Land dispute	13.0
To report theft	21.7
To report dacoity	8.6
To complain against illegal land occupation	4.3
For some dispute	47.8
Brother arrested	4.3

N = 23

Table XIX-A
Opinion about Courts
(Q43) What is the purpose of Courts?

Response	Per cent
For helping people	62.2
Not for helping people	4.5
Can't say	33.3

Table XIX-B

(Q44) Did you contact court during last two years?

Response	Per cent
Yes	6.4
No	93.6

Table XIX-C

(Q45) Was the contact with court satisfactory?

Response	Per cent
Very much	18.8
To some extent	37.5
Not at all	37.5
Can't say	6.3

N = 17

Table XX

(Q49) How many development schemes were launched during the last four years?

Response	Per cent
More than previously	10.1
Same as before	42.3
Less than previously	46.4
No response	1.1

Table XXI

(Q9-A) Is the new local government system better than the older system?

Response	Per cent
Don't know	45.3
Same as before	21.7
Better than previous system	18.0
Worse than previous system	15.0

Table XXII-A
 State of Social Capital in the Union Council
 (Q10-A) Is any one in your family a member of a voluntary group?

Response	Number	Per cent
Yes	4	1.5
No	262	98.1
No response	1	0.4

Table XXII-B
 (Q11) Are people in your community willing to help others?

Response	Per cent
Yes	62.9
No	10.1
Can't say	25.1
No response	1.9

Table XXII-C
 (Q12) Would you inform some one if you knew about corruption?

Response	Per cent
Yes	30.3
No	68.9
No response	0.7

Table XXII-D
 (Q13-A) Who would you tell about corruption?

Response	Per cent
UC Nazim	34.6
Police	34.6
Union Councilor	11.1
Influential person of area	11.1
None	8.6

N = 81

Table XXIII
(Q52) Occupation of Respondents

Occupation	Per cent
House wife	43.4
Cultivator	16.9
Small businessman	10.5
Labourer	13.4
Doing nothing	5.2
Private job	4.1
Government job	3.0
No response	3.4

Table XXIV
(Q54) Education of Respondents

Education	Per cent
Uneducated	42.3
Upto Primary	21.7
Upto Matric	18.4
Matric to Undergraduate	15.0
BA & above	2.6

Table XXV
(Q55) Financial Status of Respondents

Status	Per cent
Lower class	49.1
Middle class	46.8
Upper class	4.1

Table XXVI
(Q56) Ownership of House

Response	Per cent
Personal	93.3
Rented	1.1
Government residence	3.7
Free	0.8
No response	1.1

Table XXVII
(Q57) Length of Residence in Area

Response	Per cent
Upto 5 years	3.4
Five years	0.7
More than 5 years	94.8
No response	1.1

Table XXVIII
(Q58, 59) Voting Characteristics of Respondents

	Yes	No
Registered voter	68.9	31.1
Voted in last local government elections	64.4	35.6
Have national ID card	65.2	34.8

Table XXIX
(Q60) Ownership of Household Appliances

Appliance	Yes	No	No Response
Has TV	81.6	17.2	1.1
Has Fridge	54.7	44.6	0.7
Has Motor Cycle	38.6	60.7	0.7
Has Motor Car	5.6	93.6	0.7

MOHAMMAD AFZAL
KARAMAT ALI

AN HISTORICAL EVALUATION OF “EXPORT- LED GROWTH” POLICY IN PAKISTAN

Abstract

An historical review of Pakistan’s trade history shows that economy had led exports more than the export led the economy. Economic growth has responded to the emphasis on domestic market rather than on trade. Economic growth was robust in 1980s but the rate of growth of exports was even less than the average annual export growth of 1970s. The slogan ‘export-led growth’ was adopted in 1990s but the rate of growth of exports fell from 13.5% in 1970s to 5.6% in 1990s and the average annual GDP growth remained less than 5%. The slogan export-led growth coupled with extreme liberalization of trade has seen imports immensely outstripping exports to open an alarming current account deficit in the 2000s.

Introduction

Over the past three decades a number of studies have investigated the export-growth relationship. Many (Khan and Saqib 1993, Khan et.al. 1995, Mutairi 1993, Akbar and Naqvi 2000, Afzal 2004, Shirazi and Manap 2005, Afzal 2006a) have explored the relationship between exports and economic growth in Pakistan using different econometric techniques. Some have supported export led growth. Other studies have examined the aforementioned relationship in a cross-country context including Pakistan (Anwar and Sampath 2000, Ahmed et. al. 2000, Kemal et. al. 2002, Bahmani-Oskooee and Alse 1993, Dutt and Ghosh 1996). These studies have reported divergent results and have generally not examined export-growth nexus in a historical context.

Government of Pakistan adopted a comprehensive programme of macroeconomic reforms in late 1980s that included trade liberalisation and export promotion besides inflation, fiscal and current account management. Export promotion (EP) strategy was emphatically espoused in early 1990s while in the early decades of its history Pakistan had followed a vigorous import substitution (IS) strategy. Exports have not figured prominently in the economic growth and development of Pakistan’s economy since the earlier years.

Trade Policy and Economic Growth

Below we present a decade-wise historical account of trade policy in order to see its role in economic growth.

1950s: Import Substitution

Pakistan inherited a weak industrial base. There was no large scale manufacturing industry. The resource base of Pakistan for large-scale industrialisation was both narrow and weak because of small share in existing industries at the time of partition, scarcity of minerals and industrial raw material and absence of commercial and industrial groups (Papanek 1967).

The early architects of Pakistan's economy decided to develop the economy which was formerly integrated to the undivided Indian economy on independent lines. The non-devaluation decision in September 1949 was materialization of the said approach. The government justified the decision on the ground that Pakistan's exports mainly consisted of agricultural raw material, had low supply elasticity and also faced an inelastic world demand (Meenai 1958). This decision gave strong impetus to import substitutions (IS) industrialization. The trade between India and Pakistan remained suspended for eighteen months. Before this decision more than 50% of Pakistan's trade in 1948-49 (55.8% exports and 31.8% imports) was with India.

The share of manufacturing in GNP in 1949-50 was only 6% but even this was shared largely by the small- scale industries (4.4%). Despite 23.6% growth rate, the contribution of large-scale industry to GNP was not significant. It was only 9.34% compared to 53.2% of agriculture (Akhtar 1975). Korean War boom, non-devaluation decision and strict controls on imports caused impressive growth of large-scale manufacturing. Although industrial sector growth was spectacular, the overall growth rate of the economy hardly matched the increase in population so that there was no significant improvement in per capita income. When Korean War broke out, world demand for raw material increased tremendously and Pakistan's exports registered an increase of 109 per cent (Government of Pakistan (GOP) 1972-73). When the War ended in 1952, there was sharp decline in the level of exports and Pakistan faced severe balance of payments (BoPs) problems. Instead of devaluing currency government opted for physical controls on foreign trade which adversely affected jute and cotton exports that accounted for 76% of the total exports. However, 30% devaluation was effected in June 1955 but the level of exports failed to rise on a sustainable basis beyond one year (1955-56).

Table 1: Exports and Imports- selected years (1949-50 to 1969-70)

	1949-50	1954-55	1959-60	1964-65	1969-70
Exports (Rs. million)	1218	1223	1843	2408	3337
Imports (Rs. million)	1284	1103	2461	5374	5098
Ratio of exports to GNP	6.1	5.8	5.9	5.2	4.6
Ratio of imports to GNP	6.5	5.5	7.8	11.7	7.1

Source: CSO, Twenty- Five Years of Pakistan in Statistics, Karachi, 1972

The effect of trade on economic growth and the dependence of Pakistan's economy on the world market are depicted by the exports and imports ratio to GNP (Table 1). The ratio of exports to GNP declined gradually from 6.1% in 1949-50 to 5.2 % in 1964-65 and 4.6% in 1969-70. This shows relatively slow growth of exports, whereas the ratio of imports increased from 6.5% in 1949-50 to 11.7 % in 1964-65. No radical changes occurred in the structure of exports and it retained its agrarian raw material content. In 1949-50, the share of jute and raw cotton comprised 43% and 33% of the total value of exports respectively. Their share had dropped to 20% and 8% in 1970-71 (GOP 1972-73). Despite the substantial increase in the value-added by foreign trade from Rs.2.9 billion in 1949-50 to Rs.8 billion in 1968-69, its share in GDP during the period under review increased insignificantly from 11.6% in 1949-50 to 11.70 % in 1959-60 and 12.8 % in 1969-70.

It would be interesting to note that during the first nine years (1948-49 to 1958-59) the favourable trade balance was made possible by the large export earnings of raw jute from former East Pakistan. If West Pakistan is considered separately, we find that it had favourable balance of trade only in 1947-48 and 1950-51 (GOP 1980-81). The foreign trade performance during 1948-59 was not an encouraging feature of the economy. Imports increased from Rs.1620 million to Rs.2050 million whereas exports declined from Rs. 2554 million to Rs.1422 million during the period 1950-58. According to Ahmed (1980) official policies during 1950s reflected that trade pessimism was the dominant thinking of the policy makers in Pakistan. During 1950s the major concern and objective of the policy makers was to pursue vigorous IS industrialisation. It has been argued (Khan 1963, Lewis 1969) that IS strategy was not a well-thought out strategy. Lewis (1969) has argued that it was practical exigencies rather than conscious policy that provided the diversion of investible resources towards industry.

1960s: Multiple Exchange Rates

After the imposition of martial law in October 1958, Ayub proceeded to correct the economic mismanagement of 1950s. The martial-law government adopted a number of measures to dismantle the system of physical controls on imports, prices, profit-margin and investment. In respect of foreign trade, export bonus scheme (EBS) was the most important policy to promote manufactured exports. The scheme did not include jute and cotton, Pakistan's major export commodities. The scheme contributed to promotion of exports in the initial years but in later years it led to misallocation of resources. It was in fact a "piecemeal" devaluation without giving full advantage of devaluation (Akhtar 1975). The EBS as well as monetary and fiscal policies discriminated against agricultural exports. Because of high tariff on consumer products that increased their domestic prices, trade became less profitable than industry (Lewis 1969). Liberal import policy was adopted. Foreign aid financed more than 55% imports in 1965 (Brecher and Abass 1972). When foreign aid declined after June 1965, liberal import policy was abandoned. The free list was reduced from sixty-six items in 1964 to fourteen in 1968. There was also a cut in the licensable list, but the bonus list increased from 215 in 1966-67 to 277 in 1970 (Ahmed and Amjad 1984: 249). During 1950s and 1960s, exports did not contribute significantly to GNP. They were less than 5% in 1960s, though the marginal share of exports increased in the first half of 1960s. Analysing the export behaviour in the 1950s and 1960s, Viqar and Amjad (1984: 26) conclude that export sector had never played a dominant role in the growth of the national economy. Its overall share had never been of great significance and Pakistan, except for a very brief period, had not had great success in the export market.

1970s: Oil Prices and Workers Remittances

Before the separation of East Pakistan (now Bangladesh) in December 1971, 50% exports of West Pakistan went to East Pakistan in exchange for 18% exports of the eastern wing (Ahmed and Amjad 1984). The dismemberment of the country in December 1971 was a major structural change in the history of Pakistan. Now rice and cotton emerged as the principal exports of Pakistan. Bhutto's government attached little importance to foreign trade as "the government was absorbed with domestic affairs such as nationalisation, industrial labour reforms, social welfare, land reforms and agricultural development" (Adam and Iqbal 1987: 91).

Nevertheless, the May 1972 devaluation and the setting up of Cotton Export Corporation in November 1973, (see GOP 1974-75), were the two major measures among others (GOP 1974-75) in respect of foreign trade. Bhutto's government took steps to abolish the import licensing system, EBS, the multiple exchange rate system and banned the import of luxury items. However, imports needed for industrial and agricultural sectors were liberalised in 1973-74 (GOP 1973-74: 121). May 1972 devaluation ended the era of monetary and fiscal concessions to the industrial sector. Exports recorded phenomenal increase of 40.2% and 24.3% (in terms of dollar) in 1972-73 and 1973-74 respectively and BoPs showed a surplus of \$152.5

million in 1972-73 (GOP 1974-75). This recovery though was short lived due to the quadrupling of oil prices in 1974, resulting in sharp rise in the prices of petroleum and petroleum products, edible oil, fertiliser and all manufactured goods imports thus worsening the BoPs position and the recession that followed in the developed countries.

After the initial recovery floods, pest attack and other natural factors affected cotton and rice crops, Pakistan's two major export items, and the current account (CA) deficit quadrupled to \$549 million in 1973-74. The redeeming feature of the increase in oil prices was the increasing workers remittances that emerged as an important source of foreign exchange earnings. It was because of remittances that despite fall in net inflow of foreign economic assistance and continued shift from grants to hard loans the CA deficit vacillated around one billion dollars as remittances by Pakistani workers abroad increased from \$136 million (18% of the total merchandise exports) in 1972-73 to \$1156 million in 1977-78 and financed 80 % of the trade deficit (GOP 1980-81). Within a decade, they reached as high as \$2886 million, surpassing the merchandise export earnings by 10% in 1982-83. However, remittances started declining after 1982-83 and were \$2013 million during 1987-88 mainly attributable to slowing down of development activities in the Middle East (GOP 1988-89: 72).

1980s: Import Liberalisation

The process of liberalisation started during 6th Five-Year-Plan (1983-88) and was implemented with great force after 1988. This plan is regarded as a departure from the government's previous policies about industrial development. Export-led industrialisation was mentioned for the first time as a policy goal and there was emphasis on promoting manufactured exports of higher value-addition. Zia government took a number of steps to liberalise the trade regime particularly imports. Most non-tariff barriers, which had been imposed in 1970s due to oil shock and BoPs problems, were also removed. Between 1977 and 1983, the number of items on the free list was increased from 438 in 1977 to 539 in 1982-83 (ADB 1985) and the imports regulations were made simple. These measures, however, could not satisfy the World Bank who was calling for liberalization. The World Bank (1988: 75) concluded that both the qualitative and quantitative evidence suggests that Pakistan's trade regime was still biased in favour of import-substitution.

Zia government also took measures to promote exports. The most important step was the de-linking of the rupee from US dollar and the introduction of a flexible exchange rate. Due to liberal imports, CA deficit increased from \$1.037 billion in 1980-81 to \$1.934 billion in 1988-89 showing an increase of almost 87% during the eight years period. In spite of negative export growth -17.2% in 1981-82 and -7.9% in 1984-85, GDP growth rate was 7.56% and 8.71% respectively indicating that economic growth was relatively less dependent on export growth.

Economy did very well during 1980s because as Naqvi and Sarmad (1994) have argued the high growth of GDP that averaged 7% between 1978 and 1986 was

made possible by a strong expansion of the manufacturing sector led by a booming domestic market (due to remittances and the illegal trade that increased after Afghan war). Workers remittances reached as high as \$3 billion in 1982-83. These and the flow of Western official capital such as long-term loans and grants in the leadership of Afghan war that amounted to an annual average of more than one billion US dollars, enabled the government to finance its way out of the difficult situation created by the deteriorating terms-of-trade (TOT), helped maintain macroeconomic stability as well as promoting a high growth rate of GDP.

Pakistan's barter TOT (1980-81=100) remained below the base level throughout 1980s. Even the income TOT deteriorated during 1981-82, 1982-83, and 1984-85. Despite liberalising trade and better performance of the economy, average annual growth of exports (8.5%) during 1980s was even less than average annual growth of exports (13.5%) in 1970s. This may suggest that exports have less significant impact on GDP growth which continued to be robust.

1990s & 2000s: Export-Led Growth

The major thrust of the trade policy in 1990s has been on export expansion through fiscal incentives, diversification of export structure and import liberalisation. During 1991-92 the external sector remained under pressure due to slump in the world market, and low unit prices of most of the export commodities and exports did not grow as fast as were envisaged. On the other hand imports increased sharply mainly attributable to trade liberalisation (GOP 1991-92) leading to increasing trade deficit.

The trade policy for 1992-93 favoured the liberalisation of imports for developing export-oriented industrialisation and for increasing the efficiency and competitiveness of industries. The policy was not much successful in boosting exports as export growth was only 0.3% during 1992-93 and showed negative growth (-1.4%) in 1993-94. Reduced cotton output in 1992-93 coupled with global recession adversely affected the textile industry, the mainstay of Pakistan's exports. Exports during the periods 1990-97 and 1990-99 grew at an average rate of 8.2% and 5.6% respectively and had even negative growth during 1996-97 (-2.6%) and -10.7% in 1998-99 (GOP 1997-98 & 1999-2000). Though the share of exports increased in 1990s vis-à-vis previous decades, their growth was not agreeable as expected from export promotion policy adopted in early 1990s. Table 2 shows that exports growth have recorded a declining trend up-to 1990s. Their growth fell from 13.5 % in 1970s to 5.6% in 1990s but increased in 2000s, while their share as a percentage of GDP had increased from 4.11% in 1960s to 12.94% in 1990s indicating Pakistan's increasing dependence on international economy as well as shift towards export promotion. However, during 1960-2007 imports as percentage of GDP far exceeded exports giving rise to trade deficit growth which assumed alarming proportions in 2000-07 implying uninspiring performance of exports and reflecting a disappointment of the export-led growth policy?

Table 2: Balance of Payments Average Growth Rates (%)

	1960s	1970s	1980s	1990s	2000-07
Exports	10.70	13.5	8.5	5.6	11.84
Imports	13.62	16.6	4.5	3.22	16.9
Trade Deficit	9.0	20.5	0.9	0.42	72.6
	As a % of GDP				
Exports	4.11	9.39	9.81	12.94	12.26
Imports	11	17	18.74	17.31	15.06
Trade Deficit	6.89	6.95	8.93	4.38	2.8

Source: GOP, Economic Survey (1999-2000, 4-5, 2006-07: 4-5)

Pakistan has been facing persistent current account (CA) deficit which is a warning and dangerous signal to the overall health of the economy. A country with a CA deficit must be increasing its net foreign debts by the amount of deficit. The country has either to import capital or depletes reserves or allows exchange rate depreciation to meet CA deficit. All the three options have their own problems. The deficit country is consuming more than it is producing domestically suggesting that the country is importing present consumption and exporting future consumption and the future generations have to bear the burden of the profligacy of the past generation. As a matter of fact Pakistan has been living beyond its means. Foreign aid and remittances have financed major proportion of imports in 1960s-1980s. Both short-run and long-run foreign capital to meet CA deficit has political overtones. Accommodating capital inflow makes the deficit country a client state, and the country becomes unable to pursue desirable economic policies independently. Such state of affairs characterizes Pakistan's economy over the decades.

Factors affecting Pakistan's trade

Exports depend on both internal and external factors. World economic conditions play a decisive role in the export potential of a country. The world economy can provide market opportunities or can raise trade barriers. Relative supply of labour, natural resources and capital, state of development of human skills and the level of technology can determine the comparative advantage of a nation. In the policy context, export incentives and exchange rate influence the export performance. During 1970s and 1980s external demand factors were not favourable which affected Pakistan's export performance, due to recession in the developed countries which increased unemployment rate from 3% in 1963-73 to 8% in 1981-82 and the low world output growth of 3% between 1974-81 as against growth rate of 6% during 1963-73 (Adam and Iqbal 1987). Pakistan's share in the world trade declined from 0.17% in 1972 to 0.10% in 1977 (Ahmed 1980). During 1990-95, Pakistan's

share in the world exports was 0.19% (GOP 1997-98, 88) slightly greater than 1970s. Export share depends on comparative export prices that reflect the domestic costs of production that depends in turn upon productivity and price inflation affecting the prices of both inputs and labour. During 1970s and 1990s inflation in Pakistan has been very high. Inflation discourages macroeconomic stability and international competitiveness. Pakistan's labour productivity, too, compared to Asian countries has been very low.

Unfavourable international conditions

GATT did help promote international trade in 1950s and 1960s but the emergence of "New Protectionism" in 1980s in the developed countries (DCs) partly due to recession, unemployment and internal structural problems undermined the system and consequently LDCs had a steady decline in their terms of trade. The DCs protectionism forced many LDCs to restructure their economies, which entailed significant costs (Naqvi and Mahmood 1995). Therefore, due to the above factors Pakistan exports could not compete successfully in the world market.

Pakistan trade with the developed countries has suffered from the fact that Pakistan is not a member of a strong trading block and has limited bargaining power. Exports to individual countries are controlled by bilateral trade agreement and are subject to a number of tariff and quota restrictions (Adam and Iqbal 1987). The DCs protectionism and MFA (Multifibre Arrangements) have severely impeded Pakistan's exports. Naqvi and Mahmood (1995) argue that without MFA, Pakistan will have a wider choice to export textiles and clothing and would be in a better position to market these. Moreover, in addition to dumping in the LDCs markets by the DCs that the LDCs have found difficult to counter; the DCs have raised a number of barriers in the name of child labour, environmental protection, and human rights against Pakistan's exports.

Directions and concentration of exports

The direction of exports also influences the export performance of a country. Although Pakistan trades with a large number of countries but its exports are highly concentrated in few countries. More than 50% of Pakistan exports during 1990-91 to 1998-99 went to seven countries namely, USA, Japan, Germany, UK, Hong Kong, Dubai, and Saudi Arabia (GOP 2004-05, 119). Therefore, a change in the economic conditions and policies in these countries can significantly affect Pakistan's exports. Another limiting factor having tremendous bearing on export performance is the composition of exports. Pakistan exports are highly concentrated in a few items namely, cotton group, leather group, rice, synthetic textiles, wool & carpets and sports goods (Table 3). These seven categories of exports accounted for 84% in 1990-91 but declined to 76.6% in 2005-06. Such a high degree of concentration of exports in a few items leads to instability in export earnings that also hinders smooth growth of Pakistan's exports

Table 3: Pakistan's Major Exports (1990s & 2000s)

Commodity Group	1990-91	1992-93	1994-95	1996-97	1998-99	2000-01	2001-02	2002-03	2003-04	2005-06
Cotton	61.0	59.8	58.7	61.3	59.1	58.9	59.4	63.3	62.3	59.4
Leather	9.1	9.3	8.0	7.7	6.9	7.5	6.8	6.2	5.4	6.9
Rice	5.6	4.7	5.6	5.6	6.9	5.7	4.9	5.0	5.2	7.0
Synthetic Textiles	5.7	7.4	7.1	6.1	5.1	5.9	4.5	5.1	3.8	1.2
Sports Goods	2.2	1.9	3.2	3.7	3.3	2.9	3.3	3.0	2.6	2.1
Sub-total	83.6	83.1	82.6	84.4	81.3	80.9	78.9	82.6	79.3	76.6
Others	16.4	17.4	15.6	15.6	18.7	19.1	21.1	17.4	20.7	23.4
Total	100	100	100	100	100	100	100	100	100	100

Source: GOP, Economic Survey (2004-05: 118, 2006-07: 134)

Terms of trade and growth of production

A country is benefited by a favourable terms of trade as its exports fetch more goods in exchange when its capacity to import increases. Adverse TOT implies that the real opportunity cost of a unit of import rises when its export prices decline relative to its import prices. The adverse TOT drain out the resources because to maintain old level of imports more exports are needed and unfavourable TOT have been an important factor in the balance of trade deficit. Except for a few years, Pakistan has not enjoyed favourable terms of trade. The adverse TOT has considerably affected Pakistan's export performance.

Compared to base level 1990-91 = 100, terms of trade have shown mixed trend in 1990s and 2000s (Table 4). As a result of adverse TOT, Pakistan lost \$1.039 billion during the first ten months of 1999-2000. The loss in export earning amounted to \$319.9 million while higher payment to the extent of \$ 719.2 million was made on the import side (GOP 1999-2000: 122). Does Pakistan's economy possess sufficient strength to sustain such huge losses? TOT in Pakistan have followed an uneven trend. Three factors that have tended to influence the commodity TOT in Pakistan — concentration of exports in cotton group, concentration in markets for exports and an unpredictable world economic condition. Such factors are common to TW conditions exporting primary commodities or low value added goods.

Table 4: Terms of Trade (Base year 1990-91 =100)

Year	Export unit value	Import unit value	Terms of Trade
1991-92	119.9	131.9	90.9
1993-94	142.9	141.2	101.2
1995-96	185.4	185.5	99.9
1997-98	245.6	198.9	123.5
1998-99	258.4	223.3	115.7
1999-2000	253.8	259.0	98.0
2001-01	271.5	298.4	91.0
2001-02	271.2	298.6	90.8
2002-03	254.0	309.5	82.1
2003-04	279.6	355.4	78.7

Source: GOP, Economic Survey (2004-05: 124)

Table 5 shows that the average annual growth rate of GDP, agriculture, and manufacturing has been uneven that in turn have affected the export performance. The growth performance of Pakistan's economy has deteriorated during 1990s compared to 1980s. Only the performance of manufacturing sector was better in 2000s. That was mainly in automobiles for domestic consumption.

Table 5: Average Annual Growth of Production (1960s – 2000s) (%)

	1960s	1970s	1980s	1990s	2000-07
GDP	6.77	4.84	6.45	4.59	5.7
Agriculture	5.07	2.37	5.44	4.42	2.51
Manufacturing	9.93	5.50	8.21	4.84	9.8

Source: GOP, Economic Survey (1999-2000, 2006-07: 2)

Technology and population growth

Technological development can contribute positively to economic growth and thus comparative advantage position of a country can change. Reliance on imported technology has been instrumental in not building a solid base for industrial development and export promotion. Therefore, lack of an adequate technological development suited to the requirements of Pakistan is an important limiting factor in export promotion. That country can have a strong and growing economy, which

possesses the infrastructure as well as super structure of science and technology. High rate of population growth tends to neutralise a large part of economic growth as resources are diverted to consumption instead of productive channels (Afzal 2006b). Exports are not expected to function as “Vent-for-Surplus” in an economy where one million souls are added after every three months. Unless there is surplus capacity in the economy, export production can be increased at the expense of reducing domestic production. Domestic consumption has not been growing at a steady rate except automobiles and mobile phones that have a prohibitive and steep opportunity cost.

Exchange rate policy and inflation

Because of non-devaluation decision in 1949, Pakistan’s exchange rate remained over-valued during the first half of 1950s till the rupee was devalued in June 1955 by 30 % in order to have a realistic exchange rate vis-à-vis other trading partners. The purchasing power of rupee remained close to parity till January 1959 when a system of multiple exchange rates in the form of EBS was introduced which had turned the terms of trade against agriculture exports and in favour of manufactured goods and lacked the efficiency normally ascribed to a realistic exchange rate.

The exchange rate remained over-valued until it was devalued in May 1972 by 56.8% and was fixed at Rs.11 per US dollar. Pakistan enjoyed favourable TOT and exports increased by almost 40%. Pakistan maintained a fixed exchange rate till January 1982. The rupee value was closely linked with dollar as the rupee - dollar exchange rates were fixed. This was a misalliance. The managed floating exchange rate established in 1982 remained in operation till May 1999 when a unified floating exchange rate was introduced (GOP 1999-2000: 126). Pakistan has adopted the floating inter-bank exchange rate since 2001. Pakistan’s exchange rate has remained unrealistic and over valued for the most part of the economic history which besides having income and employment implications, discouraged exports, as they were relatively overpriced and less competitive compared to Pakistan’s trading partners. The unrealistic exchange rate has been one factor in adversely influencing export growth. During seventies the incidence of inflation in Pakistan, was most serious and phenomenal. 1990s has also not been a good decade in respect of inflation in Pakistan’s history. Inflation averaged 9.3 percent during the first ten months of 2004-05 compared to 3.9 percent in the same period 2003-04. Inflation poses major threat to macroeconomic stability. Because of high inflation, Pakistan’s exports have been losing competitiveness and devaluation becomes inevitable resulting in massive erosion in the purchasing power of Pakistani rupee.

Compared to 1982 when Pakistan switched to managed floating exchange rate, the value of Pakistani rupee has depreciated by more than 372% and 520.30% between January 1982 and June 1999 and 2001-02 (Table 6). In the last two years, the percentage change was negative as the exchange rate appreciated due to accumulation of reserves. High inflation in one trading country compared to its trade partners implies a deteriorating real exchange rate and therefore, devaluation

of the nominal exchange rate becomes inescapable which is expected to make exports competitive. Rising inflation due to devaluation makes exports less competitive and a need for devaluation arises making the vicious circle complete.

Table 6: Value and Depreciation of the Rupee – Selected Years (1980s, 1990s, 2000s)

	Rs to \$1	% Change each Year	% Change since 1982
April 1972	4.76	-	-
Feb 1973 – June 1982	9.90	-	-
1982-83	12.70	28.28	28.28
1984-85	15.15	12.39	53.00
1986-87	17.18	6.40	73.50
1988-89	19.22	9.20	94.10
1990-91	22.42	4.50	126.50
1993-94	30.16	16.20	204.60
1995-96	33.25	7.80	235.90
1997-98	43.20	10.80	336.36
1998-99	46.79	8.31	372.73
2001-02	61.43	2.99	520.30
2002-03	58.75	-2.68	493.43
2003-04	57.57	-1.18	481.52
2004-05	59.35	3.1	367.32
2005-06	59.85	0.8	371.25
2006-07	60.63	1.3	377.40

Source: State Bank of Pakistan Annual Reports (various issues).

Conclusion

Historical review of track shows that international trade particularly exports have not contributed significantly to the economic growth in Pakistan.

A certain economic growth was achieved even when international trade did not figure prominently in economic policy or even when during the first two decades import substitution was the focus. During 1950s, except for the Korean War raw material boom, export contribution was not noteworthy. Industrial development

was the principal objective during 1960s and export promotion incentives like Export Bonus Scheme (EBS) were aimed at encouraging industrial development.

The 1972 devaluation only helped exports momentarily but the momentum could not be continued in the subsequent years. However, export promotion was not the principal objective of the populist (1972-77) regime. Exports figured non-prominently in 1980s. Nevertheless, despite liberalising trade and better performance of the economy average annual growth of exports was 8.5% in 1980s compared to 13.5% in 1970s.

Export-led growth slogan was adopted in 1990s. Interestingly the export-led growth policy has mainly benefitted imports and exports have grown only sluggishly. The ensuing CA gap has consumed both remittances and aid. The resulting panic has led to export of essential commodities like food that has aggravated the inflationary pressure. The much hyped growth of GDP is less related to export performance than to speculation and consumer loan advances.

Export-led growth emphasised in literature depends upon a number of assumptions: favourable geo-political and world conditions, political stability, peaceful law and order situation, highly developed infrastructure, productive manpower, price competitiveness and high bargaining power in trade negotiations, low population growth rate and substantial research and development expenditure, etc. There is little likelihood of managing the above said factors effectively in a Third World country like Pakistan to enable the exports to increase to a level where they could contribute significantly to economic growth.

References

- Adams, John and Sabiha Iqbal 1987. *Exports, Politics and Economic Development in Pakistan*. Lahore: Vanguard Books.
- ADB. 1985. *Strategies for Economic Growth and Development: The Bank's Role in Pakistan*. Manila: Asian Development Bank.
- Afzal, M. 2004. 'Exports-Economic Growth Nexus: Pakistan's Experience'. *Indian Journal of Business and Economics* 3(2): 315-340.
- Afzal, M. 2006a. Causality between Exports, World Income and Economic Growth in Pakistan. *International Economic Journal* 20(1): 63-77.
- Afzal, M. 2006b. 'Population and Economic Development in Pakistan: An econometric investigation'. 7th Annual Population Research Conference on Population at the Crossroads of Development, November 28-30, 2006. Peshawar: University of Peshawar.
- Ahmad, Q.M. M.S. Butt, and S. Alam 2000. 'Economic Growth, Export and External Debt Causality: The Case of Asian Countries'. *The Pakistan Development Review* 39 (4): 591-608.
- Ahmed, Viqar and Rashid Amjad 1984. *The Management of Pakistan's Economy: 1947-82*. Karachi: Oxford University Press.

- Ahmed, Z. 1980. Strategy of Export - Led Growth with Special Reference to Pakistan. *Government College Economic Journal* 13 (1 & 2): 40-60.
- Akbar M. and Z.F. Naqvi 2000. 'Export Diversification and Structural Dynamic Growth Process: The Case of Pakistan'. *The Pakistan Development Review*: 4: 573-589.
- Akhtar, S.M. 1975. *Economic Development of Pakistan*. Lahore: United Publishers.
- Anwar, M.S. and R.K. Sampath 2000. 'Exports and Economic Growth'. *Indian Economic Journal* 47(3): 79-88.
- Bahmani-Oskooee, Mohsen, and J. Alse 1993. Exports Growth and Economic Growth: An Application of Cointegration and Error -Correction Modelling, *Journal of Developing Areas* 27(2): 535-542.
- Brecher Irving and S.A. Abbas 1972. *Foreign Aid and Industrial Development in Pakistan*. Cambridge, Mass: Harvard University Press.
- CSO (Central Statistical Office). 1972. *Twenty-Five Years of Pakistan in Statistics*. Karachi.
- Dutt, S.D. and D. Ghosh 1996. 'The Export-Growth and Economic Growth Nexus: A Causality Analysis'. *The Journal of Developing Areas*: 30: 167-182.
- Government of Pakistan, *Economic Survey* (various issues). Islamabad: Ministry of Finance, Economic Advisor's Wing
- Kemal, A.R., Musleh-ud Din, Usman Qadir, Lloyd F. and Sirimevan, S. Colombage 2002. *Exports and Economic Growth in South Asia*. South Asian Network of Economic Research Institutions.
- Khan, A. H. and Najam Saqib 1993. 'Exports and Economic Growth: The Pakistan Experience' *International Economic Journal* 7(3): 53-64.
- Khan, A.H., A. Malik, and L. Hasan 1995. 'Exports, Growth and Causality: An Application of Cointegration and Error-Correction Modelling'. *The Pakistan Development Review* 34 (4): 1003-1011.
- Khan, A.R. 1963. Import Substitution, Export Expansion and Consumption Liberalisation – A Preliminary Report *Reprint series in Pakistan Economics* No. (3). Islamabad: Pakistan Institute of Development Economics.
- Lewis, Stephen, R. 1969. *Economic Policy and Industrial Growth in Pakistan*. London: George Allen and Unwin.
- Meenai, S.A. 1958. 'Devaluation- An Assessment'. *Selected Papers on Pakistan Economy* 3. State Bank of Pakistan.
- Papanek, Gustav P. 1967. *Pakistan's Development: Social Goals and Private Incentives*. Cambridge, Mass.
- State Bank of Pakistan Annual Reports (various issues). Karachi.
- World Bank 1988. *Pakistan: Growth through Adjustment*. Report No.7118-Pak. Washington D.C: The World Bank.

USMAN MUSTAFA
ABDUL QUDDUS

GLOBALIZATION DRIVEN POLICIES IN AGRICULTURE: AN IMPACT ANALYSIS

Abstract

World agriculture is changing fast under the new rules of the game, with the WTO agreement on agriculture. The present study is designed to critically analyze the impacts of trade liberalization on agriculture, food security and its social/welfare aspects with special reference to poverty in Pakistan. Beside macro-level implications, micro-level effects have also been discussed by comparing the cost of producing wheat before and after liberalization as a case study to dig out the consequences of globalization on small peasants. It reveals that the plight of wheat farmers had worsened with decline in real incomes between 1990-91 and 2005-06. Government policies are neither farmer nor consumer friendly. Globalization calls for competitiveness and openness. Entering globalization without competitiveness exposes the society to inflation, poverty and food insecurity. The way biofuels and speculation have taken food out of the mouths of starving people shows how globalization has already made national agriculture exposed to foreign interests.

Introduction

Globalization refers to those various phenomena and processes that are brought about by changes in world economic integration. It refers to changes in the movement of finance, inputs, output, information, and technology across vast geographic areas. It is the corporatization of the world's culture, economy, and infrastructure through worldwide investment, rapid increase of communication and information technologies, trade liberalization, and the impact of 'free-market' on local, regional and national economies. During the last three decades, the structure of global trade has considerably changed due to World Trade Organization (WTO) agreements, structural adjustment programmes, and formation of various regional trade blocs. Pakistan is one of the founder members of the General Agreement on Tariffs and Trade (GATT) since 1948 and a signatory of Uruguay Round (UR) of Multilateral Trade Agreement (MTA) with WTO. The Agreement made significant progress in three major areas (IMF 1994); one, market liberalization which could add approximately one percent to world real GDP (US\$ 212 – 274 billion) and 10 percent to world trade upon full implementation of the Agreement; two, strengthening of rules and institutional structures, particularly the creation of WTO, which could decide on dispute and impairment of trade rules and principles, and integration of new areas into the multilateral trading system such as GATS; and three, trade-related intellectual property rights (TRIPs), trade-related investment

measures (TRIMs) and the traditionally sensitive and contentious sectors such as agriculture, textile and clothing (Abidin 1994; GATT 1999).

Agriculture is the mainstay of the economy of Pakistan. It contributes 21 percent to Gross Domestic Product (GDP), employs 43 percent of country's work force and contributes substantially to export earnings. It also provides raw materials for the industrial sector and market for industrial products. The performance of agriculture greatly affects the overall growth of GDP (Government of Pakistan 2006a). The character of agriculture in developing countries like Pakistan is subsistence, land holdings are small, and production is labour intensive with relatively low intensity of farm inputs and irrigation, and is dependent on the vagaries of nature. Consequently, the farm productivity is low. During the last three decades, in spite of the significance of agriculture in the economy and involvement of nearly half the population, most of the government policies have been discriminatory against agriculture and there has been a declining share of public investment in agricultural sector (Khan 1985; 1986; Hamid and Tims 1990; Chaudhry 1995; Faruqees 1998; ADP 2001; Mustafa et al. 2001). These policies have retarded growth, depressed the value of agriculture and possibly also lowered rural wages, implicitly transferring income from rural to the urban areas. It has resulted in migration from rural to urban centres, increase in unemployment, decrease in real wages, higher dependency ratio, etc. The urban industrial sector is not so robust as to absorb the flux of rural migrants. The situation is the worst in rain-fed and marginal areas where substantial numbers of small peasants are located. These all are considered as the major determinants of poverty in Pakistan (Amjad and Kemal 1997; Qureshi and Arif 1999; Zaidi 1999; Arif 2001; Mustafa et al 2001).

Under the new set-up of globalization, the role of Pakistan's agriculture in the international trade is quite marginal. Except in some crops where we have comparative advantage, Pakistan is a net food importing country. Therefore, even a small change in agricultural employment opportunities, or prices of inputs and outputs, can have major socio-economic effects in the country. There is a need to be focused on the perspective of agriculture under the WTO regime and the poverty scenario in Pakistan.

The present study is designed to critically analyze the impact of globalization and trade liberalization on agriculture, and food security with special reference to social welfare and poverty in Pakistan. For this we shall first have a look at the different global agreements in general and their impact on agriculture in particular within the framework of Pakistan. This is followed by a discussion of government policies regarding agriculture. This section also compares the cost of producing wheat and profitability of other crops before and after globalization so as to dig out the consequences of globalization on small peasants.

International Agreements Related to Agriculture

Having signed different WTO Agreements Pakistan is bound by rules and regulations, which can tremendously affect agriculture related matters including exports, imports, income, health, etc. The respective areas of four of these important agreements associated with Agriculture and food related matters have been briefly described below:

Agreement on Agriculture (AoA). The main provisions of AoA are related to tariff reduction. Under the agreement all non-tariff barriers to trade were to be converted into tariffs by developed countries by 2005. However, subsidies and support prices, policies which had minimal or no effect on production or trade distorting effects (Green Box) were not subject to reduction commitments. There is a provision of food aid in grant form, and credit guarantees for the least developed and food importing countries in case of anticipated increase in world food prices. The agreement would be implemented in different stages.

Agreement on Trade Related Intellectual Property Rights (TRIPs). This Agreement was also negotiated at the Uruguay Round (UR) of GATT and is now implemented and monitored by WTO regime. Intellectual Property Rights (IPRs) refer essentially to patents, copyright, and trademarks. The accord requires countries to have available enforcement procedures so as to permit effective action against any infringement of IPRs covered by the agreement.

Agreement on the Application of Sanitary and Phytosanitary Measures (SPS Agreement). The Agreement deals with the enforcement of sanitary (related to human & animal life and health) and phytosanitary (related to plant life and health) laws. The Codex Alimentarius Commission (CAC) has developed the standards, guidelines and other recommendations as a baseline for consumer protection. The SPS Agreement covers all food hygiene and food safety measures including maximum level of plant protection, chemical and veterinary medicine residues in plants and animals, food additives, and restrictions on imports from a disease infested area.

Agreement on Technical Barriers to Trade (TBT Agreement). The Standards Code mainly prevents the member countries from using national or regional technical standards as technical barriers to trade. It is focused on the implementation of international standards.

Government's Agricultural Policies

The Government of Pakistan (GoP) is using the public expenditure programme and public institutions as the key instruments for influencing and implementing globalization driven agricultural policies.

The government is bound as a signatory of WTO agreements; besides, there is also a tremendous pressure from the international financial institutions to bring a number of

macro-economic policy reforms/adjustments in the economy including the agricultural sector. Below is given a resume of the government agricultural policies on prices, subsidies, credit, research and development, corporate farming and their implications on food security and poverty.

Government Expenditure on Agriculture. The government expenditure under the Annual Development Programme (ADP) for agriculture and water sector, consolidated with the Public Sector Development Programme (PSDP) and per cent share of agriculture and water are presented in Table 1. The agricultural sector got maximum share during early eighties; during 1980-81 it was maximum i.e. 12.78 per cent and it was minimum (0.13%) during 2001-02 of total PSDP. In case of water, government PSDP percentage expenditure fluctuated over time and varied from six to 13 percent. Overtime there is a substantial decrease in per cent share for agriculture and water sector. In the 10 year perspective development plan 2001-11 the agriculture sector total share is decreasing in real term but it is also decreasing in nominal terms from 2005-06 (Government of Pakistan 2006b).

Table 1: Share of Agriculture and Water in Total PSDP/ADP

Years	Amount in Million Rupees			Per cent Share		
	Agriculture	Water	Total	Agriculture	Water	Agriculture + Water
1980-81	3340	1616	26137	12.78	6.18	18.96
1981-82	3427	2808	27000	12.69	10.40	23.09
1982-83	3457	3840	29563	11.69	12.99	24.68
1983-84	2798	3381	28161	9.94	12.01	21.94
1984-85	2920	3541	32606	8.96	10.86	19.82
1985-86	4435	4589	37576	11.80	12.21	24.02
1986-87	3221	4129	42579	7.56	9.70	17.26
1987-88	3493	4538	46548	7.50	9.75	17.25
1988-89	3990	3389	47844	8.34	7.08	15.42
1989-90	3012	5440	57705	5.22	9.43	14.65
1990-91	3042	6815	88412	3.44	7.71	11.15
1991-92	3692	5554	89629	4.12	6.20	10.32
1992-93	3461	8461	119890	2.89	7.06	9.94
1993-94	2164	12265	145252	1.49	8.44	9.93
1994-95	2004	14109	153720	1.30	9.18	10.48
1995-96	1561	14947	172816	0.90	8.65	9.55
1996-97	1210	15740	139743	0.87	11.26	12.13
1997-98	940	11233	141495	0.66	7.94	8.60
1998-99	431	12319	152707	0.28	8.07	8.35
1999-00	540	11380	148767	0.36	7.65	8.01
2000-01	820	11596	150325	0.55	7.71	8.26
2001-02	168	16177	130000	0.13	12.44	12.57
2002-03	797	10914	134000	0.59	8.14	8.74
2003-04	1500	14689	160000	0.94	9.18	10.12
2004-05	7065	21405	202000	0.35	10.60	14.1
2005-06	9866	32775	272000	0.37	12.23	15.7
2006-07	11277	44484	383000	0.29	11.61	14.6
2007-08	15799	63550	520000	0.30	12.22	15.3

Source: Planning Commission, PSDP (various issues)

Agricultural Price Policy. The prices of farm commodities are not as stable as of industrial products. They exhibit wide up and down trends due to variability in output and the inelasticity of demand, high perishability of a number of products, biological nature (longer time period to cover different adjustment), and seasonal nature of production (Salam 2001). Furthermore, agriculture production is not only an enterprise but it is the livelihood of a large majority of farming communities. They have to sell their product, because they don't have enough money and storage capacity, even at lower prices in order to fulfill their urgent needs and return their loans.

The GoP is intervening in the commodity market via deregulation of agricultural prices and removal of the subsidies. Only four agricultural crops i.e. wheat, cotton, sugarcane and rice are covered through the support price in Pakistan. The price support programme has positive as well as negative impacts (Mustafa 2001). Government announces support prices which are, in general, lower than the market prices and in real terms not increased proportionately to the input prices (Tables 2&3).

Table 2: Real Support Prices* (Rs./40kgs)

Year	Wheat	Seed Cotton	Rice (Basmati-385)
1990-91	112	245	144
1991-92	112	253	140
1992-93	107	247	144
1993-94	118	233	137
1994-95	105	262	138
1995-96	102	236	131
1996-97	127	264	135
1997-98	118	245	152
1998-99	111	-	153
1999-00	134	-	157
2000-01	129	410	176
2001-02	124	337	195
2002-03	128	392	214
2003-04	134	526	194
2004-05	139	309	195
2005-06	134	329	173
2006-07	141	410	189

Source: API (various issues), * Based on 1990-91 CPI.

In fact if we compare the cost and return for wheat during 1990-91, 2000-01, and 2005-06 the farmers are much worse off. The cost of production and returns from wheat to the average farmer in Punjab before and after WTO driven policies of liberalization and deregulation are presented in detail (Table 3). As compared to 1990-91 an average farmer, after the induction of such policies, lost Rs. 452.38 per acre in 2000-01 and Rs. 224.39 per acre in 2005-06. This is because cost per kg during this period increased from Rs. 2.65 to Rs. 3.4 and Rs. 3.47, respectively

(Table 3). Even in other crops the situation was not as good as of 1990-91. Between 1990-2007 the net profit per 40 kg wheat and rice declined (even become negative) from Rs. 16 to Rs. -3.38 and Rs. 8 to Rs. -10.08, respectively. Only cotton and sugarcane production remained profitable in the period of 1990-91 to 2006-07 (Table 4). The input costs increased much more than the procurement price of the different crops. Farmers spent 2.22, 1.74, 3.41, 1.02 and 16.33 maunds (40 Kgs) of wheat, rice (fine), rice (coarse), cotton and sugarcane to purchase a bag of DAP during 1990, while during 2008 they were required to buy the same bag by paying 4.96, 2.82, 4.43, 2.38, and 51.67 maunds, respectively. The urea prices were decreased over time as prices of wheat, rice, cotton and of sugarcane, respectively (Table 5 and 6). The average annual increase in price over a period 1990 to 2008 was 8.09, 9.6, 10.4, 9, 7.7, 6.5 and 10.8 for wheat, rice fine, rice coarse, cotton, sugarcane (SC), urea and DAP, respectively. These were the government procurement prices while most small farmers sell their crop just after the harvest because they have to pay loans and other liabilities, and thus generally, availed still lower prices.

Although there is a price support policy but in the recent past the prices fell below the support price fixed by the government while government agencies were unable to intervene. Likewise the prices continued to fall below the support price in case of potatoes, gram, paddy, onion, etc to the disadvantage of grower. Now-a-day's government announces price support for only four crops i.e. wheat, rice, cotton, and sugarcane. In fact, there is no effective institution available for implementing the support prices (Table 2).

Subsidies. The total crop production subsidies in all forms, federal as well provincial, show a decreasing trend. Government provides little subsidy to fertilizers to boost their application in spite of increase in their prices. The support provided under AMS of WTO agreement in case of Pakistan is negative. The domestic support prices have been considerably below their corresponding border prices. Contrary to the developing countries the developed countries are continually providing support and subsidies to their farming communities e.g. "In 1998, 24 countries of the Organization for Economic Co-operation & Development. (OECD) provided total agriculture support of about \$335 billion, with producer support at \$ 251 billion. This makes total support to domestic agriculture in these countries three times larger than the level of official aid flows. In 1997 in 24 OECD countries, producer support to rice and meat was, respectively, 4.11 and 6.18 times the value of world export of these products" (Actionaid 2001). It is important to note that Indian Punjab farmers are getting free electricity for their tubewells. We not only have substantially high electricity tariff rate but also have serious load shedding problem. Tube well irrigation is a vital input for agricultural production in Pakistan.

Table 3: Average Farmers Cost of Production and Return on Wheat in Punjab, Pakistan, before and after Liberalization

Sr. #	Operations/ Inputs/Outputs	Before liberalization (Rs./Ac.) 1990-91	After liberalization (Rs./Ac.) Real* 2000-01	After liberalization (Rs./Ac.) Real* 2005-06	Differences (Rs./Ac.)	
(1)	(2)	(3)	(4)	(5)	(4)-(3)=(6)	(5)-(3)=(7)
1	Land preparation	213.68	313.84	369.93	+100.16	+156.25
2	Seed & planting	212.75	285.01	498.87	+72.26	+140.49
3	Intercultural/ weeding/ plant protection	12.89	29.85	106.54	+16.96	+93.65
4	Irrigation	272.39	336.42	528.57	+64.03	+256.18
5	Farm yard manure	14.39	14.77	25.38	+0.44	+11.99
6	Fertilizer	338.88	413.22	739.81	+74.34	+400.93
7	Interest of investment @ 12% & 14% per year for 6 months on item 1- 6 excluding 4	62.60	94.79	89.38	+32.19	+26.78
8	Harvesting and threshing	514.25	620.43	796.27	+106.18	+282.02
9	Land rent and revenue for 6 months	606.00	786.07	952.92	+180.07	+346.92
10	Management charges for 6 months	64.46	80.13	102.89	+15.67	+38.43
11	Marketing cost (Rs/40k)	4.00	4.48	5.08	+0.48	+1.08
12	Gross cost (Item 1to11)	2316.29	2964.33	3845.72	+648.04	+1529.43
13	Yield per Ac. (kgs)	872.88	872.88	1108	-	+235.12
14	Support price (Rs/kg)	2.80	3.22	3.35	+0.42	+0.55
15	Returns (13 X 14)	2444.06	2810.67	3711.80	+366.61.	+1267.74
16	Value of wheat straw	283.66	335.74	338.45	+52.08	+54.79
17	Gross returns (15+16)	2727.72	3146.41	4050.25	+418.69.	+1322.53
18	Net return per Ac. (17 - 12)	411.43	182.08	204.53	-229.35	-206.90
19	Gross cost per kg. (12/13)	2.65	3.40	3.47	+0.75	+0.82
20	Net return per kg. (14/19)	1.06	0.95	0.96	-0.11	-0.10

Sources: Government of Pakistan (1990b, 2000, and 2005. Prices are deflated with CPI based year of 1990-91.

Table 4: Net Profit (Rs/40 kgs.)*

Years	Wheat	Cotton	Rice	Sugar Cane
1990-91	16.00	46.00	8.00	2.02
1991-92	10.72	33.21	-11.93	1.27
1994-95	1.55	57.66	-5.74	0.76
1995-96	0.35	31.93	-6.70	0.77
1998-99	-10.95	108.96	5.55	2.66
1999-00	3.11	34.25	-0.86	1.35
2006-07	-3.38	55.27	-10.08	4.66

* Farm level costs were taken from Government of Pakistan (1990b, and 2000) of average growers. The prices are deflated with CPI 1990-91 as base years.

Table 5: Maunds (40 Kgs) of wheat, rice (fine and coarse), cotton and sugarcane required to buy a bag of DAP over a period of time.

Year	Wheat	Rice (Fine)	Rice (Course)	Cotton	Sugar Cane
1990	2.22	1.74	3.41	1.02	16.33
1991	2.19	1.75	3.49	0.97	16.24
1992	2.03	1.51	3.11	0.88	15.09
1993	1.68	1.45	2.99	0.85	14.94
1994	2.19	1.8	3.69	0.95	18.49
1995	2	2.16	4.28	1.2	22.28
1996	2.3	2.17	4.29	1.11	23.04
1997	2.35	1.82	3.69	1.13	16.11
1998	2.22	2.02	3.8	0.81	19
1999	2.16	1.85	3.51	0.9	18.54
2000	2.23	1.74	3.27	0.92	18.61
2001	2.37	1.84	3.46	0.91	16.9
2002	2.55	1.99	3.73	0.96	19.13
2003	2.61	2.28	4.25	1.07	22.83
2004	2.5	2.41	4.35	1.08	25.03
2005	2.6	2.16	3.6	1.11	23.98
2006	1.55	0.93	2.15	0.64	10.95
2007	4.24	2.12	4	1.5	30
2008	4.96	2.82	4.43	2.38	51.67

Agricultural Credit. Agricultural credit provides financial resources to the farming community particularly, for the purchase of primary inputs like fertilizer, seed, pesticides, machinery, equipment, etc. There are four major agencies viz. Agricultural Development Bank of Pakistan (ADBP), Taccavi, Cooperatives and Commercial Banks, distributing credit to the farming communities in the country. The nominal credit disbursed by these agencies as of 1990-91 to 2000-01 fiscal years seems very impressive i.e. 14,968.49 million rupees during 1990-91 to Rs 29101.41m during 2000-01 and 108747.4m during 2004-05 but in real term (1990-91 as base

year) its value had decreased by 2427.02 million rupees and 36128.7, respectively (Government of Pakistan 2006b).

Table 6: Maunds (40 Kgs) of wheat, rice (fine and coarse), cotton and sugarcane required to buy a bag of Urea over a period of time.

Year	Wheat	Rice (fine)	Rice (coarse)	Cotton	Sugarcane
1990	1.74	1.36	2.67	0.8	12.79
1991	1.57	1.26	2.5	0.7	11.64
1992	1.58	1.17	2.41	0.68	11.71
1993	1.31	1.14	2.33	0.67	11.67
1994	1.36	1.11	2.29	0.59	11.46
1995	1.11	1.2	2.38	0.67	12.42
1996	1.42	1.33	2.64	0.68	14.17
1997	1.42	1.1	2.23	0.68	9.74
1998	1.15	1.05	1.98	0.42	9.89
1999	1.09	0.93	1.77	0.45	9.34
2000	1.21	0.94	1.77	0.5	10.08
2001	1.31	1.02	1.92	0.51	9.38
2002	1.37	1.07	2	0.51	10.28
2003	1.2	1.05	1.95	0.49	10.5
2004	1.17	1.13	2.03	0.51	11.7
2005	1.23	1.02	1.7	0.52	11.31
2006	1.24	0.74	1.72	0.51	8.78
2007	1.34	0.67	1.27	0.48	9.5
2008	1	0.57	0.89	0.48	10.42

Agricultural Research and Extension. In theory returns to research expense on agriculture can be even upwards of 40 per cent in a year for limited periods (Alston et al 2000; Mustafa et al 2004). Agriculture research increases output for market and farmers' own consumption and counters the negative impact of shrinking land and water resources. In practice, however, agricultural research system is funded, organized and managed at a level where only maintenance is being achieved with little prospect for boosting crop yield and livestock production through research (Nagy and Quddus 1998) or to even create readiness to meet disaster. The research findings can only be useful if they are properly transferred to the farmer's field. The available extension services are poorly equipped, funded and managed.

Availability of improved inputs at the farmer's field at the right time and price are the primary requirement to boost the production and yield of crops. In this connection seed and fertilizer are the basic and crucial inputs. Unfortunately, over time their availability to farmers has decreased and prices have surged, which reduces their use affecting production and profitability of crops (Table 7).

Table 7: Distribution of Improved Seed in the Country (000 Tonnes)

Crops	1998-99	1999-00	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07
Wheat	104.21	106.37	159.22	143.25	129.41	135.51	171.20	168.12	163.46
Paddy	2.28	3.81	2.27	4.86	4.49	7.55	9.72	12.52	11.90
Maize	0.51	2.84	2.40	2.96	4.50	5.18	5.95	9.06	9.25
Cotton	27.02	33.40	29.46	39.87	31.12	28.39	28.90	34.17	31.79
Gram	0.35	0.19	0.25	0.31	1.51	1.34	0.57	0.41	0.38
Oil Seeds	0.11	0.15	0.20	0.32	0.99	0.80	1.78	1.79	1.82
Grand-Total	134.48	146.76	193.80	191.57	172.02	178.77	218.12	226.07	218.60

Source: Government of Pakistan (2007).

Table 8: Consumption of Fertilizers, Quantity Sold, Percentage Change Over Previous Year And N.P Ratio in Pakistan (In '000' N/Tonnes).

Year	Nitro- gen	% Change	Phos- phate	% Change	Potash	% Change	Total	% Change	N.P. Ratio
1990-91	1471.6	(+) 0.3	388.5	(+) 1.6	32.8	(-) 18.2	1892.9	(+) 0.1	3.8:1
1991-92	1462.6	(-) 0.6	398.0	(+) 2.4	23.3	(-) 29.0	1883.9	(-) 0.5	3.7:1
1992-93	1635.3	(+)11.8	488.2	(+)22.7	24.1	(+) 3.4	2147.6	(+)14.0	3.4:1
1993-94	1659.4	(+) 1.5	464.2	(-) 4.9	23.2	(-) 3.7	2146.8	(-) 0.1	3.6:1
1994-95	1738.1	(+) 4.7	428.4	(-) 7.7	16.6	(-)28.4	2183.1	(+) 1.7	4.1:1
1995-96	1990.9	(+)14.5	494.4	(+)15.4	29.7	(+)78.9	2515.0	(+)15.2	4.0:1
1996-97	1985.1	(-) 0.3	419.5	(-)15.1	8.4	(-)71.7	2413.0	(-) 4.1	4.7:1
1997-98	2075.0	(+) 4.5	551.0	(+)31.5	20.0	(+)150.0	2646.0	(+) 9.7	3.8:1
1998-99	2099.0	(+) 1.2	465.0	(-) 15.6	21.0	(+) 5.0	2585.0	(-) 2.3	4.5:1
1999-00	2217.0	(+) 5.6	596.0	(+) 28.2	18.5	(-) 13.1	2832.0	(+) 9.5	3.7:1
2000-01	2264.5	(+) 2.1	676.7	(+) 13.5	22.8	(+)23.2	2964.0	(+) 4.6	3.4:1
2001-02	2285.3	(+) 0.9	624.5	(-) 27.6	18.8	(-)18.0	2928.6	(-) 1.2	3.7:1
2002-03	2349.1	(+) 2.8	650.2	(+) 4.1	20.5	(+) 9.2	3019.8	(+) 3.1	3.6:1
2003-04	2526.7	(+) 7.6	673.5	(+) 3.6	21.8	(+) 6.3	3222.0	(+) 6.7	3.8:1
2004-05	2796.4	(+) 10.7	865.1	(+) 28.5	32.5	(+)49.2	3694.0	(+)14.7	3.2:1
2005-06	2926.6	(+) 4.7	850.5	(-) 1.7	27.0	(-) 16.9	3804.1	(+) 3.0	3.4:1
2006-07	2649.7	(-) 9.5	978.7	(+) 15.1	43.1	(+) 59.6	3671.5	(-) 3.5	2.7:1

Note: Minor difference may be due to rounding of figures

Source: National Fertilizer Development Centre (NFDC), Islamabad.

The recent increase in the price of DAP fertilizer will further affect its use. The recommended proportion of Nitrogen and Phosphate fertilizer intake is 2:1, which is not practised in the country. The proportional consumption of these fertilizers

has varied a lot even going up to 4.7:1 though it became better during 2006-07 (Table 8). However, recent tremendous increase in the price of DAP fertilizer combined with inadequate extension services, is likely to substantially decrease its use affecting production and profitability.

High and Volatile Food Prices

Starting around the second half of 2007 and continuing through 2008 the commodity markets have seen a steady and steep upward trend in prices. The unusually steep rise in the world commodity prices is subject of much discussion. Many reasons have been offered among which the rise in oil prices, diversion of corn and cropland for the production of biofuels especially in the US and Brazil, and an increased consumption of cereals and meat in China and India have topped the media list. Among other causes the indirect effects of oil price rise on fertilizers and transport, falling world food stockpiles (at their lowest for 25 years), local hoarding, increase in political instability, sub-prime mortgage crisis in the US, use of productive agricultural land for urbanization, hurricanes, animal diseases and even climate change have all been mentioned. In the words of FAO (2008), "Amid political uncertainties and surging energy prices, agricultural markets over the past year have also had to confront abnormal incidences of natural disasters, ranging from devastating hurricanes to fast spreading animal diseases. Based on current indications, several agricultural commodities are likely to experience still more unstable months ahead and, in most instances, the fundamentals point to even further gains in prices." Interestingly while ill advised exports and cross border smuggling have been considered a prime cause for food price rise in Pakistan, UN agencies on the other hand, have called for further freedom of movement and lifting of restrictions on cross border movement of food to ease the crisis of shortages and price rise.

Perhaps the most important factor responsible for food price rise, speculation and future trading in commodities including oil, has found the least mention in the international media. Wherever speculation is taking place and wherever food is being used to produce biofuels the effects are being felt universally under the new globalized regime. It is difficult to imagine how Third World countries like Pakistan can ensure food security for their people without questioning and reconsidering the new world order of globalization, which they have so enthusiastically welcomed and adopted under the advice of WTO and other multilateral agencies.

Biofuels are a new phenomenon and need further comment. According to a recent report in the New Statesman (Lynas 2008), "What biofuels do is undeniable: they take food out of the mouths of starving people and divert them to be burned as fuel in the car engines of the world's rich consumers. This is in the words of the UN special rapporteur on the right to food, Jean Ziegler, nothing less than a 'crime against humanity'.....According to the World Bank, global maize production increased by 51m tonnes between 2004 and 2007. During this time, biofuels use in the US alone (mostly ethanol) rose by 50m tonnes, soaking up almost the entire

global increase...The EU, meanwhile, persists in the erroneous belief that biofuels can help reduce greenhouse-gas emissions....Yet recent research suggests otherwise: two major studies published in Science magazine in February showed clearly that once the agricultural displacement effects of the new fuels on rainforests, peatlands and grasslands are taken into account, emissions are many times worse than from conventional mineral petrol.”

Food Security

The high food prices have profound impacts on both the consumers as well as producers of the country. Food security refers to the availability of food and one's access to it. A household is considered food secure when its occupants do not live in hunger or fear of starvation. Food security in Pakistan is a serious challenge and it remains a real one notwithstanding the growth in agriculture production since it depends both on availability of foods as well as its access and affordability. Overtime the continuing increase of population absorbs the food growth and over the last 10 years the per capita availability of wheat, rice and, cereal (kg/annum) has decreased (Table 9). The public sector food and fibre storage capacities have not increased. During 1995 wheat storage capacity was 4,596,000 tons, which increased up to 1999 but since then it has decreased and was 4,339,000 tons during 2001 and remained constant up to 2006. The situation with respect to rice and cotton has also shown a decreasing trend (Table 10).

Table 9: Per Capita Availability of Wheat, Rice, and Cereals (kg/annum)

Crop	1997-98	1998-99	1999-2000	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07
Wheat	140.17	140.92	131.48	113.79	114.92	119.23	119.31	122.85	123.17	127.00
Rice	14.98	19.32	20.72	15.91	14.03	17.21	18.23	12.96	10.00	16.64
Cereal	5.92	7.01	6.63	6.81	6.58	5.94	6.25	6.77	8.73	7.24
Edible Oil	-	12.38	11.08	11.48	10.67	10.77	11.16	12.35	12.89	12.93

Source: Government of Pakistan (2006a)

Table 10: Government Storage Capacity (000 tonnes)

Crop	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Wheat	4596	4777	4777	4780	4780	4580	4339	4339	4339	4339	4339	4339
Rice	831	789	789	789	789	-	-	826	826	826	826	826
Cotton	550	520	500	500	500	-	-	450	450	450	450	450

Source: Government of Pakistan (2006a and 2007)

Implications of Globalization Driven Policies on Agriculture, Food Security and Poverty

Pakistan being one of the founder and signatory members of WTO has to comply with its policies. The catch is competition. If we cannot compete there would be junk of imported stuff and the Pakistani producers would suffer especially the poor small peasants. Under ideal conditions Pakistan should benefit from international trade, but the conditions and the reality on the ground are different from the presumptions. Pakistan's comparative advantage lies in its low cost of production achieved mainly through poverty. But poverty acts as a brake on productivity. At its current level of development Pakistan's agricultural economy is neither prepared to face the challenges nor able to avail of the opportunities offered by globalization. The consequences of trade liberalization in Pakistan have been widely discussed since the mid-nineties (Golden and Mensbrugge 1995, Inco & Winters 1995; Kemal et. al. 2001; Khan and Mahmood 1996; Low 1995; PIDE 1995, and Mustafa et. al., 2001, Malik, 2006).

While we have complied with all the requirements of WTO agreements i.e. reduction of tariff rate, subsidies, AMS in case of Pakistan was negative. The WTO-enforced compulsory changes have reflected negatively on the production side of agriculture at large but the new economic doctrine has continued to consider the government-sponsored interventions as factors that distort the market and banned them. As against this any effects on the farmers in the developed and industrialized countries were offset by increases in direct income support programmes. These programmes "that are not designed to affect production" (green box measures) are not considered a market distorting factor by the WTO and thus it has no objection on these.

The farming communities in Pakistan are worse off due to liberalization. The reforms have adversely affected production, agricultural food security, and increased poverty in the countryside. The input prices have increased at a faster rate than commodity prices. The farmers are getting less net profit. The effect is severer on the poorer segments of the farming community. They are unable to harness even the price increase benefits because they don't have enough savings to store the crop for higher prices. They have number of liabilities, which have to be paid during the harvesting season in the form of crop and therefore, they may fetch sometimes even lower than the government announced procurement price.

The WTO Agreement on the application of SPS measures specifies that countries should base their technical regulations and sanitary and phytosanitary measures on international standards or face international trade barriers. Outbreaks of food-borne diseases have created pressures for the need of these rules and regulations. Pakistani products have been subjected to formal bans e.g. meat to the Middle East, animal casing to Romania, oranges to Sri Lanka, mangoes to USA, Japan and so on. Recently, the Government implemented a voluntary export suspension of fish products to European Union (EU) countries, to give the industry a "breathing

space” to attain the SPS standards required. Pakistan was subject to 26 EU food alerts indicating that there were real concerns related to some food exports during 2004-05 (The World Bank 2006).

Poor infrastructure in underdeveloped countries including Pakistan is also not in favor of poor and far-flung area agricultural producers. Given the deplorable state of rural infrastructure in low-income countries in general, and in the poor and far flung areas in particular, massive investments are also needed in other economic risk reduction services such as insurance, irrigation and storage. Lack of such investment gradually shifts the comparative advantage back towards subsistence production at very low-income and little multiplier to the rural non-farm sector. Over time the Government has been spending less on agriculture although in recent years there has been some increase in its share. Winters (2000) notes that “the transaction costs of trade with remote villages are often so great that it can be cheaper for grain mills to buy from distant commercial growers than from small farmers located in the region.” Improved infrastructure also lowers the final cost of imported inputs in the producing areas. There is thus, need for investment but this need is being used to build a case for corporate farming.

The implications of multinational corporate farming on socio-economic and political issues, however, are complicated and serious. These corporations will profiteer and create monopolies, driving the small farmer out of farming. This in turn will have serious repercussion for the food security, poverty and sovereignty of the country. After signing of MTA and creating of the WTO, the prospects of trade warfare and the threat of protection will not just fade away. The conditions of perfect competition are just not there. The developed and industrial countries are not opening their economy fully and are protecting themselves through the safeguards, anti-dumping, and countervailing measures (Abidin 1994; Naqvi 1994; Streeten 1998). Globalization and economic integration have many other adverse effects too. The gains from globalizations are not likely to be evenly distributed, either within or between countries (FAO 2000b). Wealth in ever fewer countries is combining with growing disparity between the rich and the poor (Petrovic et al 2007). Today 1.2 billion people in the world live in extreme poverty (Dokmanovic 2003; ILO 1998). Unemployment, poverty, inequality and alienation are increasing, partly (though not solely) as a result of globalization process (Rodrik 1997; ILO 2005). Global economic growth is increasingly failing to translate into new and better jobs that could lead to reduction in poverty (ILO 2005). The menace of poverty in Pakistan has been an increasing trend in all international measurements from 1990 to 2001 (Mustafa 2000; Arif 2001; Arif et al 2001). However, according to the Government of Pakistan (2006a) between 2001 and 2005 the percentage of population living below poverty line fell from 34.46 percent to 23.9 percent, a claim now widely contested and believed to be largely a statistical manipulation.

After 25 years, the World Development Report of the World Bank this year is focusing on agriculture. Major changes have occurred in those 25 years. What has not changed, however, is the central role that agriculture can play to trigger growth

and to reduce world poverty, which is still overwhelmingly rural and will be so for the decades to come (World Bank 2008). In Pakistan there is a big yield gap among subsistence farmers, progressive farmers, demonstration plots and research farm fields, which shows there is a lot of room to increase productivity. For this an adequate overall agricultural development strategy, proficient price policy, timely and affordable inputs supplies, demand based R&D along with effective and efficient credit and extension services are fundamental. Unfortunately, however, most Third World countries, Pakistan inclusive, have lost initiative in controlling their national policies or to criticize the globalization mantras of liberalization, deregulation and privatization. Paradoxically, today it is US and Britain themselves, the biggest champions of globalization, who have now nationalized or quasi-nationalized some of their biggest investment banks and insurance companies and calling for the need for regulation of the international financial markets to save their own economies from a total meltdown (Financial Times editorial September 18 2008; Guardian September 22, 2008 :front page and editorial Sept 19, 2008).

References

- Abdullah, A. Ahmed 1998. 'Comments on Globalization: Threat or Opportunity?' by Paul Streeten.' *The Pakistan Development Review* 37(4): 81-83.
- Abidin, M. Z. 1994. 'The Impact of Uruguay Round Trade Negotiations on Malaysia.' *Journal of Economic Cooperation Among Islamic Countries* 15(1-2): 137-154.
- ActionAid 1999. *International Trade and Food Security; An Introduction for ActionAid Staff and Partners*. Corporate Centre Advocacy Function (CCAF). London: ActionAid.
- ActionAid 2001. *Food Rights Campaign: Key Issues for the WTO Ministerial Conference, Doha*. Islamabad: ActionAid.
- ADB. 2001. *Agricultural Biotechnology: Poverty Reduction, and Food Security*. Manila: Asian Development Bank.
- Akanji, Bola, O. 2007. 'Globalization and Food Security: The Linkages of Gender Inequality and Agricultural Growth in Africa: Conceptual and Empirical Issues.' *Journal for Political Theory and Research on Globalisation, Development and Gender Issues*. www.Globilizacija.com/doc.
- Alston, J. M., C. Chan-Kang, M.C. Marra, P. G. Pardey, and T.J. Wyatt 2000. 'A Meta-Analysis of Rates of return to Agricultural R&D: Ex Oede Herculem.' *IFFRI Research Report* No. 113. Washington, D.C.: International Food Policy Research Institute.
- Amjad, Rashid and A. R. Kemal 1997. 'Macro-economic Policies and their Impact on Poverty Alleviation in Pakistan.' *The Pakistan Development Review* 36(1).
- Anderson K. and E. Valenzuela 2006. 'Do Global Trade Distortions Still Harm Developing Country Farmers.' *Policy Research Working Paper* 3901. The World Bank.
- Arif, G. M. 2001. 'Recent Rise in Poverty and Its Implications for the Poor Households in Pakistan.' *16th Annual General Meeting and Conference of Pakistan Society of Development Economists*, 22nd-24th January 2001. Islamabad: PIDE.

- Arif, G. M., Hina Nazli and Rashida Haq 2001. 'Rural Non-Agriculture Employment and Poverty in Pakistan.' *16th Annual General Meeting and Conference of Pakistan Society of Development Economists*, 22nd-24th January, 2001. Islamabad: PIDE.
- Bourguignon F., V. Hevin, and D. Rosenblatt 2006. 'Global Redistribution of Income.' *Policy Research Working Paper* 3961. The World Bank.
- Chaudhry, M. Ghaffar 1995. 'Recent Input-Output Price Policy in Pakistan's Agriculture: Effects on Producers and Consumers.' *The Pakistan Development Review* 34: 1-23.
- Chaudhry, M. Ghaffar 2001. 'Impact of WTO Negotiations on Agriculture in Pakistan and Implications for Policy.' *Pakistan Journal of Agricultural Economics* 4(1): 1-14. Islamabad: Agricultural Prices Commission.
- Dokmanovic Mirjana 2003. 'Economic Globalization and Paradoxes.' *Journal of Victimology of Serbia Temida* 4(2003): 15-22. Serbia.
- Encarta 2006. 'Globalization.' *Encarta*, 1993-2005. Microsoft Corporation.
- FAO. 2000a. *Impact of the Uruguay Round on Agriculture*. Rome: Food and Agricultural Organization.
- FAO. 2000b. *Multilateral Trade Negotiations on Agriculture. A Resource Manual 1. Introduction and General Topics*. Rome: Food and Agricultural Organization.
- FAO. 2008. *FAO international commodity prices database 2008*. Rome: Food and Agricultural Organization.
- Faruquee R. 1998. 'Pakistan Agriculture in 21st Century.' *The Pakistan Development Review* 37(4 Part II): 245-253.
- GATT. 1995. *The Result of the Uruguay Round of Multilateral Trade Negotiations –Market Access for Goods and Services: Overview of the Results*. Unpublished report.
- Goldin, Ian and D. Van der Mensbrugge 1995. *The Uruguay Round: An Assessment of Economy wide and Agricultural Reforms*. World Bank Conference January 26-27.
- Government of Pakistan 1990a. *Census of Agriculture*. Lahore: Agricultural Census Organization.
- Government of Pakistan 1990b. *Support Price Policy for Wheat, 1990-91 Crop*. Islamabad: Agricultural Prices Commission.
- Government of Pakistan 2000. *Support Price Policy for Wheat, 2000-01 Crop*. Islamabad: Agricultural Prices Commission.
- Government of Pakistan 2003. *Report National Commission on Agriculture*. Islamabad: Ministry of Food Agriculture, and Livestock.
- Government of Pakistan 2005. *Support Price Policy for Wheat, 2005-06 Crop*. Islamabad: Agricultural Prices Commission.
- Government of Pakistan 2006a. *Economic Survey 2005-06*. Islamabad: Economic Advisor's Wing, Finance Division.
- Government of Pakistan 2006b. *Agricultural Statistic of Pakistan*. Islamabad: Ministry of Food, Agriculture, and Livestock.
- Hamid N. and W. Tims 1990. *Agricultural Growth and Economic Development: A case of Pakistan: 85-96*. Paris: Development Centre Studies OECD.
- ILO. 1998. 'Labour and Social Issues Relating to Export Processing Zone.' Report for discussion in the Tripartite Meeting of Export-Processing Zone-

- Operating Countries, Geneva: ILO. www.Globilizacija.com/doc. *Journal for Political Theory and Research on Globalisation, Development and Gender Issues*.
- ILO. 2005. 'Globalization Failing to Create New, Quality Jobs or Reduce Poverty.' ILO/05/48. www.Globilizacija.com/doc. *Journal for Political Theory and Research on Globalisation, Development and Gender Issues*.
- IMF. 1994. *International Trade Policies: The Uruguay Round and Beyond: Principal Issues 1*. Washington, D.C.: International Monetary Fund.
- Ingco, Merlina and L. Alan Winter 1995. Pakistan and Uruguay Round: Impact and Opportunities, A Quantitative Assessment. *Background paper for Pakistan 2010*. Washington, D.C.: The World Bank.
- Kemal, A. R., Rehana Siddiqui and Rizwana Siddique 2001. 'Tariff Reduction and Income Distribution: A CGE-based Analysis for Urban and Rural Households in Pakistan.' *Research Report 181*. Pakistan Institute of Development Economics.
- Khan, A. H. and Z. Mehmood 1996. 'Emerging Global Trading Environment Challenges for Pakistan.' *Asian Development Review 14*(2): 73-115.
- Khan, Mohsin S. 1998. 'Comments on Globalization: Threat or Opportunity?' by Paul Streeten.' *The Pakistan Development Review 37*(4 Part 1): 77-80.
- Low, P. 1995. 'Impact of the Uruguay Round on Asia, Trade in Services and Trade Related Investment Measures.' Conference on *Emerging Global Trading Environment and Developing Asia*, Asian 29-30 Manila, Philippines: May Development Bank.
- Low, P., and A. Yeats 1994. *Non-tariff Measures and Developing Countries: Has the Uruguay Round Leveled the Playing Field*. (Policy Research Working Paper 1353) Washington, D.C.: World Bank.
- Lynas, Mark 2008. 'Food Crisis: How the rich starved the world'. *New Statesman* 21 April, 2008. London.
- Mahmood , Khan Hasan 1985. 'Public Policies and Agricultural transformation in Pakistan.' *The Pakistan Development Review*.
- Malik, S. J. 2006. 'Globalization and its Impact on Poverty in Pakistan.' A background paper for the *Pakistan Poverty Reduction Strategy Paper II*. Innovative Development Strategy, UNDP.
- Mellor J. 2002. 'The Impacts of Globalizations on the Role of Agriculture.' *Expert Consultation on Trade and Food Security: Conceptualizing the Linkages*. Rome: 11-12 July 2002.
- Mustafa, U. 1998. *Monitoring and Evaluation Training Manual*. Garhi Dopatta, AJK: Area Development Programme – AJK, UNDP, ESMA.
- Mustafa, U. 2000. 'Strengthening Grassroots Institutions for Poverty Alleviation in AJK.' Proceeding of the 32nd All Pakistan Science Conference June 12-15, 2000. ESMA, Garhi Dopatta, AJK: Pakistan Association for the Advancement of Science, Lahore.
- Mustafa, U., W. Malik and M. Sharif 2001. 'Globalization and Its Implications on Agricultural, Food Security and Poverty in Pakistan.' *The Pakistan Development Review 40*(4): 767-786.

- Mustafa, U., W. Malik and M. Sharif 2004. 'The Agricultural Science & Technology Indicators (ASTI) Initiative in Pakistan - Federal Public Sectors: Preliminary Findings.' *Proceeding of ASTI Workshop* PARC/IFPRI.
- Nagy Joseph G. and M. A. Quddus 1998. 'The Pakistan Agricultural Research System: Present Status and Future Agenda.' *The Pakistan Development Review* 37 (2):167-187.
- Naqvi, S. N. Haider 1994. 'Developing Countries and the Uruguay Round Agreement.' *Journal of Economic cooperation Among Islamic Countries* 15(1-2): 91-112. The Statical, Economic and Social Research and Training Centre for Islamic Countries.
- Petrovic Dejan, Serbia, and Motenegro 2007. 'The Economic Aspects of Globalization.' www.Globilizacija.com/doc. *Journal for Political Theory and Research on Globalisation, Development and Gender Issues*.
- PIDE. 1995. *Structure of Protection in Pakistan*. Islamabad: Pakistan Institute of Development Economics,
- Punjab Lok Sujag 2001. *Securing Food or Boosting Exports?* Lahore: *Punjab Lok Sujag*.
- Qureshi, Sarfraz K., and G. M. Arif. 1999. *Profile of Poverty in Pakistan, 1998-99*. Islamabad: Pakistan Institute of Development Economics.
- Rodrik, Dani 1997. *Has Globalization Gone Too Far*. Washington, D.C.: Institute for International Economics.
- Salam Abdul 2001. *Support Price Policy in Pakistan: Rationale, Practice and Future Option*. Islamabad: Agricultural Prices Commission, Government of Pakistan.
- Sartaj, A. 1990. 'Agricultural Policies for the 1990.' *Development Center Studies*. Paris: OECD.
- SESRTCIC. 1995. 'Implications of the Uruguay Round Agreements on Commodity Trade of OIC Countries: A Preliminary Assessment.' *Journal of Economic Cooperation among Islamic Countries* 16(1-2) The Statical, Economic and Social Research and Training Centre for Islamic Countries.
- The World Bank 1990. *Staff Appraisal Report. Pakistan Agricultural Research Project II*. Agriculture Operations Division, Country Department I, Europe, Middle East and North Africa Region. Report No. 7614-PAK.
- The World Bank 2006. *Pakistan's Agrobased Exports & Sanitary and Phyto-Sanitary (SPS) Compliance*. Joint World Bank and UNIDO Report.
- The World Bank 2008. *World Development Report 2008: Agriculture for Development*. Washington, D.C.: The World Bank.
- U.N. DAW 1999. *World Survey on the Role of Women in Development*, New York: United Nations.
- Winters, L. A. 2000. *Trade liberalisation and poverty*. Brighton: University of Sussex.
- Zaidi, Akbar S. 1999. 'Is Poverty Now a Permanent Phenomenon in Pakistan.' *Economic and Political Weekly* XXXIV(4) October, 1999.

SAJJAD NASEER

THE DIALECTICS BETWEEN DIVERSITY AND UNITARIANISM IN PAKISTAN

Abstract

To seek unity amid diversity has been the eternal problem of India. The British succeeded in establishing a strong political centre to rule India formally for a century. The legacy of the British for central and south India enabled India to move forward to evolve a democratic polity. Pakistan inheriting a different governance strategy failed to shape the political process into a democratic order. This paper attempts to explain why Pakistan and India emerging from the single Indian political entity and having experienced the same British colonial rule followed different political and federal trajectories. It is argued that a separate Muslim identity was projected from 1857 starting with Syed Ahmed Khan and when Pakistan did emerge in 1947, it had the additional task of nurturing its new identity. Furthermore the part of India comprising Pakistan carried different British antecedents and experience of governance compared to the part that now emerged as the new State of India. Finally, the two countries started with different leading classes, feudal in Pakistan, bourgeoisie in India.

Introduction

As successor states to the British Raj, both India and Pakistan inherited the same federal structures at the time of independence. India, borrowing heavily from the Government of India Act 1935 for its constitution, kept the flavor of federal centrism, yet was successful in operating its political system with formal democracy. The mature and seasoned political leaders, supported by a well-knit nationally organized Congress Party contributed to the political process. Additionally, the secular ideology served as a facilitator in a diverse society like India and absence of any one dominant ethnic group dampened Indian Army's appetite for military intervention. However, the civil bureaucracy continued to play a dominant role aiding and assisting the elected governments over the years.

In obvious contrast to the Indian case, Pakistan took a different constitutional and political route, though sharing the same historical experience with India. In its history of sixty years, Pakistan has changed its governance document from vice regal system to Presidential to Parliamentary to Martial Laws and a hybrid splitting the system between Presidential and Parliamentary tilting the balance of power in favour of the President. This jockeying for power runs as a recurring theme throughout Pakistan's history. Pakistan, unlike India missed out on the contribution that a charismatic leader could have made in stabilizing and consolidating the working of

the political system. Absence of mature political leaders and colleagues of Mr. Jinnah along with a weak and loosely organized Muslim League did not yield the desired political results. The Islamic ideology was used as a national blanket to cover or suppress the ethno – religious, linguistic, sectarian and regional divisions in the name of national unity and integration. The military continued as the most dominant, vested and entrenched interest group in the politics of Pakistan. The legitimization by the judiciary of every military ruler did not help in creating the ambience where rule of law and supremacy of constitution was respected. In the process, Pakistan experienced, ‘guided’, ‘controlled’, ‘indirect’, ‘remote controlled’ or ‘military democracy’. Federalism, though declared as part of each constitution remained elusive, causing alienations among groups and regions resulting in greater demand for autonomy, accompanied by eruption of violence, insurgency and pull towards secession. Pakistan is still a long way from even a rudimentary democracy.

Whereas the above comparison between India and Pakistan is revealing, it is still inadequate in terms of explaining as to why the two countries experiencing the same British colonial rule took different political routes. Scholarly literature on this issue offers different interpretations. This paper, departing from the orthodox and general explanations, seeks to question the thesis of what is described as common British antecedents and legacy. It will be argued that not only the British policies of governance were different for what constitutes Pakistan today than those pursued and implemented for central and southern India but also the dominant political classes of the area partitioned as Pakistan were very different from the dominant ruling classes of India. The political, administrative and security concerns were negotiated from a different set of considerations by the British, for the two regions. Consequently, political norms and traditions of that period had a profound impact on the post 1947 developments in Pakistan including the issue of federalism and constitutional engineering. The colonial legacy of the areas comprising Pakistan impacted the dialectic between state construction and political processes in critical ways. The assessment of the legacy and its role in articulating relations between state and society is a central theme of this undertaking.

Federalism: Conceptual considerations

Federalism is generally viewed as an ideal type of political arrangement of governance which accommodates the diversity of groups and regions to form a political union enabling these identities to maximize advantages by ceding some authority to the centre yet seeking to preserve and keep their separate identity by retaining a degree of autonomy. In this, two obvious but diverse political trends are discernible; urge to cooperate for mutual advantage and strong penchant to preserve socio-political, ethnic and regional identity and some space for political action. These two trends meet in an uneasy interaction in many federally organized states resulting in civil wars, secessionist movements and in the case of Pakistan to actual secession.

The widely cited example of a successful federal system is that of the United States. The route followed in this case was unique. Thirteen American colonies first declared independence from the British colonial authority to establish a confederation in 1781. Subsequently, these states decided to convert the confederation into a federation under the 1789 constitution. The fear of a 'majority rule' kept lurking in the minds of political managers. Despite the safeguards ensured under the American Constitution, the principle of separation of powers, bicameral legislature, a strong upper house etc, a bloody civil war was fought (1860-65) on an economic issue eventually to save the Union.

Another illustration is that of an existing unitary state that opts for a federal system by formally dividing power between the national/federal government and the smaller administrative units like provinces in order to ensure sustainability. This approach was followed by Canada when it adopted the federal system in 1867. Australia also embraced federalism in 1901 on the same pattern.

The case of India and Pakistan falls in yet another category. The British Raj driven by its imperial policies and compulsions created a 'special type' of federal system in its colony. Introduction of this system through devolution, decentralization and autonomy to the administrative units of provinces was provided within the trappings of the vice-regal system. A federation was established under the Government of India Act 1935, comprising of the provinces and the princely states. Even the tribal areas were given a special dispensation. The federal system outlined in the Government of India Act 1935 was the one inherited by India and Pakistan at the time of independence in 1947. Pakistan continued to be governed under the Government of India Act 1935 with minor modifications till 1956. However, the rulers in Pakistan did not realize the significance of preserving cultural and political diversity within the boundaries of the country and they at the very outset imposed a single national language Urdu and Islam as instruments of national unity.

Pakistan Movement and Requirements of a New National Identity

In order to create a separate country from a single historical entity a separate single identity was required. The process started a century before the creation of Pakistan. In the run up to federalism enshrined in the Government of India Act 1935, the Muslim community had acquired 'orientations' different from the majority Hindu community. Syed Ahmad Khan, a leading political thinker, leader and activist wanted the Muslims to recognize that they had their own special interests which must be secured and promoted within the constraints of the available political environment. He, repudiated the Congress claim that India was 'one nation'. His contention was that "India is inhabited by different nationalities", they professed different religions, spoke different languages, their ways of life and customs were different, their attitude towards history and historical traditions were different. There was no one nation in India, (Allana 1977:3) and Congress, therefore, could not claim to be the spokesman of so many nationalities.

Conscious of its minority status, the Muslim community did not respond favourably to the introduction of Western representative system of government in India, which suited the Congress ideally. Syed could clearly see that such a system was bound to reflect the domination of the Hindus, the majority community, over the Muslims. The Hindus would obtain four times as many votes as the Muslims because their population was four times as large. "It would be like a game of dice, he argued, "in which one man had four dice and the other only one" (Fatehpuri 1982:36-37). These concerns guided Syed Ahmad Khan to mobilize the Muslim community in the immediate post 1857 period.

The minority status within the parameters of representative system of government incrementally introduced through various constitutional instruments by the British pushed the Muslims to seek guarantees and safeguards against the prospects of majority Hindu rule. The Muslims moved politically to form The All India Muslim League political party to articulate their demands. Very soon, the Muslim demand for 'separate electorate' was accommodated in the Government of India Act 1909. This, however, became a contentious issue between the Hindu and Muslim communities particularly after 1920 and the Indian National Congress consistently opposed the separate electorate throughout except conceding it only once in 1916 in the Lucknow Pact.

Another political strain running throughout the Muslim politics was to secure autonomy of the provinces within the orbit of federal setting with maximum number of provinces obtained for the Muslims. Mr. Jinnah in his famous 'fourteen points' insisted on Muslim majorities in the legislature of Punjab, Bengal and North West Frontier Province (NWFP). There was demand for creation of a new province of Sindh separated from Bombay Presidency. He urged for reforms in the NWFP and Balochistan along the same lines as in other provinces. The import of these demands was to strengthen provinces, especially the Muslim majority provinces, against the prospects of Hindu majority threat at the Centre, (Mujahid 1981: 473-481)

The Government of India Act 1935 promoted a Federation with a strong unitary bias. The Act not only empowered the centre to legislate the federal list of subjects but also the concurrent list if so decided. The Act did not protect provincial autonomy as the ministerial functions were restricted by the authority of the Governor who was representative of the Governor General. The Act did not allay the Muslim apprehensions articulated all along and the Muslims were reluctant to submit to a central government dominated by the Hindu majority community. They were conscious of the fact that they could never turn the majority rule into one of concurrent majority rule. Therefore, Jinnah condemned the Act saying that "it was devoid of all the basic and essential elements and fundamental requirements which are necessary to form a federation", (Ahmad 1968: 9). The Congress rule in seven of the nine provinces brought out the excesses of majority rule and confirmed the Muslim fears that the minority would suffer at the hands of majority. Consequently the Muslims demanded in the Lahore Resolution of 1940 that the Muslim majority provinces be autonomous and sovereign.

The dominant political trends which emerge from the above discussion are that the Muslims did not welcome the form of representative government introduced by the British and they did not agree with the concept of governance embodied in the Government of India Act, 1935 as it would condemn them to a permanent minority status. This inevitably had serious and far-reaching implications for the post 1947 governance paradigm for Pakistan.

Second, while it is true the Government of India Act had a strong unitary bias it was not applied across the board. Princely states and tribal areas were exempted. Even in the provinces where it was applied, different strategies were used to accommodate and use the class, cultural and historical trends of the areas.

Historical political diversity of constituent provinces

In Balochistan the imperialistic interests demanded a different policy for managing the tribal conflicts and establishing law and order. The treaty of 1876 to be called the Sandeman system or the “forward policy”, aimed at recognizing the Baloch and Pukhtun tribal chiefs and payment of allowances to them for the purposes of raising levies paid handsome dividends. Richard Bruce, who worked under Sandeman, made a profound observation that, “we have bound Waziristan hand and foot and thereby pledged to mould our policy on such lines as will afford the Maliks efficient support and protection”, (Bruce 1900:298).

British law never penetrated Balochistan tribal areas and the various Constitutional Acts had no impact on them. The tribal chiefs were free to administer their areas according to tribal customs. Additionally, these areas served as a cushion against invasion from the north and it was expected that they would serve as the first line of defence. Balochistan was controlled from the centre and the situation did not change until 1970, when it was granted the status of a province, despite the fact that its area constituted 40% of present day Pakistan’s total area with only 5% of population. Ironically, All India Muslim League demanded provincial status for Balochistan from 1927 onward but, after independence, the same was delayed till 1970 and hence it missed out on the impact of British laws and constitutional developments.

The British policy towards Western Punjab rested on a three pronged strategy. First, it sought to stabilize and consolidate the land owning class. Though Punjab was considered to be a province of small proprietors, the distinction of Western Punjab from the remaining part of the province was the dominance of the landed aristocracy; “at a guess about 40% of the cultivated area is in the hands of men who own over fifty acres”, (Darling 1932:102-103). Additional Jagirs and squares of land were granted along with titles.

Secondly, an important political move by the British was the launching of the Punjab National Unionist Party in 1923 with official blessings. This had serious implications for the governance of this area. The Unionist Party, it is amazing to

note, continued to rule Punjab from 1923 to 1946 and carved out a separate role in alliance with the British establishment. In the elections of 1937, the All India Muslim League could win only two seats in the Provincial Assembly. One of these two legislators crossed the floor leaving Maulana Barkat Ali as the only member. Mr. Jinnah had to reach an understanding with Punjab Unionist leadership league that goes under the title of Khizar–Jinnah Pact 1944. This style of governance prevented both the All India Congress and particularly the All India Muslim League from playing an effective role in the Muslim majority Province. In other words, Punjab was kept aloof from the mainstream politics of British India.

Thirdly, the most important decision of the British policy was to recruit the army from this area. The obvious advantage of the Punjabi dominant military force was that it could be deployed in the rest of India without facing the prospects of disobedience or disloyalty; a masterly stroke of strategy which paid dividends to the British. Pakistan inherited the same dominant Punjab and Pathan military force which dictated the course of events in the post 1947 period. From one particular perspective the army as an institution became the key variable in the body-politics of Pakistan.

The North West Frontier Province (NWFP) was the last area to be annexed by the British. Politically, the NWFP comprised the tribal areas of Malakand, Khyber, Kurrum, North Waziristan and South Waziristan and the settled Districts of the then Hazara, Mardan, Peshawar, Kohat, Bannu and Dera Ismail Khan. The tribal areas were left to be administered by the tribes and were divided into agencies each with a Political Agent serving as a liaison between the British government and the tribal chiefs. The settled areas, however, became part of the British administrative structure. This development came rather late to these areas and even the Government of India Act 1919 was not introduced in the province till 1932. Obviously, the province lagged behind the rest of India in terms of constitutional evolution.

Sindh was part of Bombay Presidency despite the Muslim League's demand of making it into a separate province. Living in the backyard of Bombay, the people of the area never experienced the vibrations of the developed area. The dominance of landed class kept it in a backward state. After acquiring the status of a province in 1936, it had only 11 years of political and administrative experience before the establishment of Pakistan.

East Bengal, which later became East Pakistan had a different political and constitutional evolution. It was the first area to encounter the British on their arrival. It also underwent land reforms, exposure to educational institutions, and trade and commerce which all put together, gave the people of this area different orientations. It experienced the partition of Bengal (1905) and the Swadeshi movement, the annulment of Partition (1911), establishment of All-India Muslim League in 1906 at Dhaka and subsequent developments which all gave its people different political

attitudes. The union of this province with the Western provinces of Pakistan into a single country had serious implications for later political developments.

The above discussion demonstrates that the British paradigm for governance for the areas constituting present day Pakistan was different from the rest of India. It further suggests that the colonial legacy was not uniform across India. This distinction is critical in examining the post-1947 political developments in Pakistan.

The other scholarly work on this theme has been produced by Ayesha Jalal, in her widely acclaimed yet controversial book, entitled 'Democracy and Authoritarianism in South Asia', (Jalal 1995). In her brilliant expose, she treats British India as one entity and applies the British legacy across the continent in the context of governance paradigm. Unable to make a distinction about British policies regarding different parts of India, Ayesha's comparative study of South Asia focuses on 'Structural functioning' in these countries to be seen as continuation of the British legacy. She obviously discerns a striking similarity of 'authoritarianism' across these countries but India was successful in fixing a democratic veneer over its authoritarian structures. However, it is interesting to note that the Indian democratic set up has mediated with authoritarian structures effectively so far.

Constitutional development since independence

At the time of independence, Pakistan adopted the Government of India Act 1935 with minor changes to be its first interim constitution. Having failed to frame a constitution for almost a decade, the inherited vice-regal system continued to be the governance document. During this period (1947-56) attempts were made to plant the parliamentary system within the confines of an imperial order. But the feudal hold on political power backed by imperialism precluded all forms of democratic progress.

The first constitution of Pakistan (1956) was drafted by Chaudhry Mohammad Ali, a civil bureaucrat turned politician. The first article of the constitution referred to Pakistan as a Federal Republic. The preamble of the constitution stressed federalism but in the absence of the rule of law and the social classes to enforce it was a federal constitution merely on paper.

The Government of India Act 1935 was diluted somewhat in terms of allocation of subjects between the centre and the provinces. But before the 1956 constitution could be implemented by holding general elections, Martial Law was imposed in October 1958.

The second constitution was framed in 1962, this time, by a military bureaucrat, Ayub Khan. This constitution did not refer to the federal system as mentioned in Article 1, which officially described the name of the state. The preamble, however, mentioned the federal system, delineating the relationship between federal government and the constituent units of the federation. It created a powerful centre

with concentration of power in the office of the President and an impotent unicameral legislature. The Provincial governments were headed by the Governors, who as nominees of the President also enjoyed enormous powers. Lip service was paid to federalism but in reality a more centralized system was put in place.

After the highly centralized rule of a decade, Pakistan moved into another phase of Martial Law rule, where power was concentrated in the army chief and the institution of army. The authoritarian style of governance continued until the country's break-up in December 1971.

In Article One of the 1973 Constitution, framed under Zulfikar Ali Bhutto's leadership, Pakistan is mentioned as Federal Republic to be known as the Islamic Republic of Pakistan. The preamble also recognizes federalism as one of the organizing principles of the state.

The 1973 Constitution is characterized by the absence of Provincial List of subjects and provides for a Federal List of 59 subjects and a Concurrent Lists of 47 subjects, In case of conflict the federal law prevails over the provincial legislation. The sixth and seventh schedules of the 1973 Constitution place additional restrictions on the legislation powers of the Provincial Assemblies.

For the first time, a bicameral legislature was provided to accommodate the federating units. The upper House called the Senate, had limited power and had no effective role in the passage of the budget. Pakistan has the unique distinction of passing the budget in the same way as provided in the colonial Government of India Act 1935. The budget is divided into charged and non-charged categories. The charged items include the Defence, President, Governors and debt-receiving expenditure which is mentioned as one liner statement and cannot be debated on the floor of the house. Additionally, the centre picks up 90% of the revenue.

The introduction of 8th amendment under which the President on his own can dissolve the National Assembly, tilted the balance of power in favour of the President. This power of the President was briefly taken away during Nawaz Sharif's second term as Prime Minister but has been reintroduced through 17th amendment under Musharraf regime. The 1973 Constitution now functions as a hybrid system and its parliamentary aspect of working have been seriously undermined. The federation operates under the overwhelming authority of the centre, in fact under that of the President.

The constitutional developments in Pakistan suggest a movement towards establishing a strong centre ostensibly in its bid to ensure survival. This instinct for survival led to a India centric policy which moved Pakistan to enter into various security and defence alliances. The extended military rule of some 34 years enabled the dominant military to expand its tentacles to develop corporate interests. Ayesha Siddiqi in her recent book argues how the power of the military has transformed Pakistani society, in which the armed forces have grown into distinct class

entrenched in the corporate sector. This intensifies the interest of the military in remaining in power or when not in power and indirectly control governance (Siddiqa 2007:2). The serious imbalance between the institutional and politico-economic role of the army and the weak and in some cases dependent political parties does not augur well for the restoration of a genuine democratic process in Pakistan.

Conclusion

The British were able to rule as diverse a place as India because they allowed this diversity to reflect in administration and governance. The British Raj driven by its imperial constraints and compulsions created a special type of federal system in India within the trappings of the vice-regal system. A federation established under the Government of India Act 1935 comprised provinces, princely states and more or less autonomous tribal areas.

Unfortunately the ruling elite of Pakistan was unable or unwilling to learn from the above mentioned British historical experiences or from the historical, cultural and political differences of entities comprising Pakistan. They were driven by the need to forcibly forge a single Muslim identity through the instrument of Urdu and Islam and patriotic militarism as continuing basis for the state of Pakistan. Space for political and national debate was eliminated, ostensibly, in the name of Islam and national unity. The state became a hostage to incompetent feudals, corrupt bureaucrats and the centralist demands of a short-sighted military all seeking to serve their vested interests.

References

- Ahmad, Jamil-ud-Din, *editor* 1968. *Speeches and writings of Mr. Jinnah*. 1:9.
- Allana, G., *editor* 1977. *Pakistan Movement: Historic Documents*: 3
- Bruce, Richard Issaq 1900. *The Forward Policy*. London: Longmans.
- Darling, Malcolm Lyall 1932. *Punjab Peasant in Prosperity and Debt*. London: Oxford University Press.
- Fatehpuri, Farman, *editor* 1982. *The Present State of Indian Politics* by Sir Syed Ahmed Khan. Lahore.
- Jalal, Ayesha 1995. *Democracy and Authoritarianism in South Asia*. Lahore: Sange-e-Meel Publications.
- Mujahid, Sharif al 1981. *Quaid-e-Azam Jinnah: Studies in Interpretations*: 473-481.
- Siddiqa, Ayesha 2007. *Military Inc*. Karachi:Oxford University Press.

TARIQ ABDULLAH

MAKING PAKISTAN UNIVERSITIES CENTRES FOR RESEARCH

A case study of the Centre for Solid State Physics

Abstract

In the last five years (2002-2007) under the directions of the Higher Education Commission, Islamabad, a process of transforming Universities within Pakistan into research oriented Universities has been initiated. What are the prospects for these initiatives? Under this perspective Universities should not only transmit knowledge but be actively engaged in the creation of new knowledge. About 30 years ago in 1976 a number of Centres of Excellence were established in Pakistani Universities with the same objectives of initiating research in selected fields within Pakistan. This paper attempts to analyse the successes and failures of one such Centre of Excellence. The Centre for Solid State Physics established within the Punjab University, Lahore, has been engaged in producing M.Phil graduates and to a lesser extent PhDs in the field of Solid State Physics over the last 30 years. Its experience serves as a guide for current efforts at transforming Universities within Pakistan.

Introduction

The Higher Education Commission (HEC) is engaged in an initiative to transform Universities in Pakistan into institutions capable of the creation of new knowledge. This is presented as the first of its kind of initiative although Centres of Excellence were established in 1976 with a proposed focus on research. The success of this previous attempt has been limited and the lack of success may be due to more fundamental causes than are being addressed by the present initiative. Without addressing these issues this noble agenda may still not be realized. There is much to be learnt from past experience and if we do not we may repeat the same mistakes at considerable expense.

Centre for Solid State Physics: An illustrative case

The Centre of Excellence in Solid State Physics was established in 1973 in the Punjab University. The Centre was one of a series of Centres of Excellence established in different Universities within Pakistan to encourage high level teaching and research in selected fields. The focus of this Centre has been to conduct research in the field of Solid State Physics and to train students in research. The field of Solid State Physics derives from the advent of the transistor which was a solid state device as opposed to a vacuum device such as in a conventional cathode

ray tube (CRT) television. This field of Physics lies at the heart of the developments in Computer Technology and Communications Technology which underpin current technology in the home, office and workplace.

The student intake into the Centre for Solid State Physics has been students with a Masters degree in Physics and the focus of its activities has been the M.Phil in Solid State Physics programme that began in 1977 and continues to date. This programme engages the students in a two year programme consisting of one year of course work and one year of research work culminating in an M.Phil thesis. About 300 M.Phil graduates have been produced in the period 1977-2007 although approximately double this number was originally admitted in the programme. The focus of both teaching and research has been strongly linked with the Experimental Laboratories set up in the Centre and to a lesser extent with the theoretical and computational research interests of the past and presently existing staff.

In contrast to the Physics Department at Quaid-e-Azam University, Islamabad which had at its inception a focus on Theoretical Physics, the Centre for Solid State Physics has had a focus on Experimental Physics. This was developed with a substantial Japanese grant which enabled the establishment of the original laboratories of the Centre in the late 1970s.

Physics has been a science of nature which described the different forms of matter found in nature and was hence classified as a Natural Science. However with the passage of time the focus of Physics research and particularly Solid State Physics has shifted from a focus on the natural world to a focus on a man made world. Hence Physics has acquired a character which is more universal in character and less specific and unique to Pakistan.

This aspect differentiates Physics research in Pakistan from those sciences which still have a largely descriptive aspect within Pakistan i.e. sciences engaged in exploring the biodiversity within Pakistan or the Geography and Geology specific to Pakistan. An important consequence of the engagement of Physics in the contemporary world with the artificially man made world is that the gestation period for a Physics research student is much longer in years of training as compared to more descriptive sciences. Competencies in Quantum Mechanics and Electromagnetic Theory are necessary for all research students. The demands of a good academic grounding in Physics are much more necessary prerequisites for a research career in Physics than many other natural sciences.

The Centre has also engaged in the training and production of PhD students. However the production of PhDs from the Centre in the same period from 1977-2007 has been around a dozen PhD graduates which corresponds to about 5% of the number of M.Phil graduates.

As a concluding remark about the description of the Centre it may be pertinent to point out that staff members have been publishing their research work in national

and international journals regularly and in a survey completed in 2001 the staff of the Centre were found to have about 300 publications to their credit. This over a period of 25 years is a good number. One reason for this is the much reduced teaching work load that was required from teachers in the Centre. As a result they were able to focus on teaching directly related to their research activities.

Questions and Issues

When discussing science and scientific research in Pakistan many questions can be asked. For example, if we are concerned with the research students entering science departments we may wish to understand how the prior education of science graduates influences their aptitude and inclination towards undertaking scientific research. Do the incoming students have an adequate background and basic competency to undertake scientific research. In other words, what has been and is the present quality of science graduates entering a research centre and engaging in research. Are we able to attract the best students to engage in research. Are there career opportunities for students entering research fields in science?

Do the present research centres provide a stimulating environment for students to be inspired and motivated for research. Has the Centre encouraged new talent to enter the field of research? Can research be taught or is it developed by practice and by example? If it is true that research is a kind of apprenticeship then ability to develop research programmes will crucially depend on the extent to which existing staff are engaged in research rather than just teaching.

Why do we want to build Research Universities? Is it to develop a research culture and train and develop young talent with the ability to participate in this longer term project of developing an indigenous scientific culture? Or are we building Research Universities to provide manpower for a “knowledge based economy” and hence prepare students for employment in this knowledge based economy whether abroad or locally. Should the research activities in countries like Pakistan be focused on developing abilities and longer term aims or should it be orientated towards applications with economic impact within the country? Are these linkages between research and applications likely to bear fruit in societies like ours where we find ourselves integrated into a global economy where we consume what we don’t produce and produce what we don’t consume.

Aside from the geographical context alluded to above there is the historical context of education and more generally the nature of society in Pakistan where pre-capitalist social formations persist in various forms and the colonial experience persists in a neocolonial form.

These broader questions will only appear in this study in a tangential form as we will be concerned with the more particular questions like the balance between teaching and research which is desirable in developing a research culture. Are we able to build self sustaining research groups? What kind of relationship is desirable between

theoretical research and experimental research? Physics as a discipline has maintained such a distinction between these research categories that perhaps distinguishes it from most other scientific disciplines. This lead us to the question of how does Physics research differ from research in other fields of Science and points to why we should recognise this diversity in character of the various scientific disciplines before drawing conclusions and making policy in a top down approach. What importance should be given to leadership, vision and perspective in developing a research institute and as a corollary what kind of autonomy is desirable for building a research centre?

For those of us who have been engaged in a Research Centre over the last thirty years it is obvious the context of doing research has changed considerably from the 1970s to the first decade of the new millennium. The birth of the internet has changed the accessibility to research literature and the computer revolution has enabled a rapid growth of a new field in Physics, Computational Physics which introduces a triad of Theory, Experiment and Computer Experiments to replace the previous dichotomy of Theory and Experiment.

How have these developments influenced the way in which we do Science in Third World countries? For example the question of plagiarism now abounds at both undergraduate and post graduate level in universities all over the world.

In this study we will try to assess the successes and failures of the Centre in developing a research culture and training students to be promoters of this culture within Pakistan.

Many constraints will be seen to lie in the context, both geographically and historically, in which Pakistan finds itself today. Perhaps this study can provide indications in which directions can progress be made and what are the broader roadblocks to be overcome in this programme of building research universities within Pakistan.

Successes and Failures

What have been the successes of the Centre in its efforts to develop research in the field of Solid State Physics?

M.Phil programme

The Centre has successfully run a M.Phil programme for the last almost 30 years. Each year about 20 students have been admitted to this programme and about half of this intake have been successful in completing their course work and research thesis and have gained an M.Phil degree. The M.Phil course work has been focused around the research interests of the existing staff members both experimental and theoretical. The Centre has not designed its M.Phil programme to remove the deficiencies of the earlier M.Sc degree but rather it has tried to focus on the

demands of a research degree. This is in contrast to many recently initiated M.Phil programmes which do not have any particular focus in research and end up as just another degree. As a result the M.Phil research work carried out within the Centre has mostly been based on in-house research facilities. Consequently there has been a link between the first year of course work and the second year of research work and in addition most of the research supervision has been provided by the Centre's own staff. These are some of the positive experiences of the Centre.

Research activities

The staff members of the Centre have generally remained active in research work and research publications. The teaching load of staff members have been relatively small in terms of number of hours of teaching and this has enabled them to develop and modify their courses over time and focus them more on their research interests. Research is a time consuming activity which requires continuity and immersion in a particular field. As a result the Centre's staff members have been able to maintain continuity in their research activity. In many other departments and Universities PhD qualified staff have had a break in their research activity since returning from abroad with a PhD degree. These staff members find it difficult to become active again in research. As a consequence new PhD students find it difficult to find active research supervisors who can guide and advise them in their chosen research field. In these departments with newly established PhD programmes the course work requirements of PhD students are met but well designed research programmes in which these students can contribute are far and few between. This continuity in research work needs to be nurtured and sustained. In this regard the Centre has had modest success. The choice of research topic has frequently been oriented towards a possible research publication. The other possible focus of the topic of research is to provide the students an opportunity to learn about research through engaging with new topics for their personal development. A balance between these different approaches is desirable.

Research facilities

The experimental research facilities of the Centre have played an important role in the maintaining this continuity of research work over a period of almost 30 years since the inception of the Centre in 1973 and the initiation of the M.Phil programme in 1976. Although much of this equipment was acquired in the 1970s it still forms the basis of the Centre's research facilities. These laboratories include the Thin Film Laboratory, X-ray Diffraction Laboratory, Auger Electron Spectroscopy Laboratory, Scanning Electron Microscope Laboratory and the Spark Source Mass Spectrometer. For many years these facilities were unique to the Centre and it goes to the credit of the Centre that research work publishable in international journals were carried out in many of these Laboratories. Currently research facilities are being provided in many institutions within Pakistan but lack of qualified staff to direct research and design suitable research programmes are soon going to manifest themselves as a serious impediment to the development of research in these

institutions. Furthermore the Centre was lucky in that in the 1970s many fresh PhDs in Physics returned from abroad to serve in Pakistan. This has not been the case in the 1980s and 1990s. It remains to be seen if the HEC schemes for PhD training can reverse this decline in research staff following the retirement of the staff recruited in the 1970s. New experimental facilities without research staff able to design a meaningful research programme may not result in the expected boost in research activities.

Theoretical Research

Theoretical research in the Centre was never the focus of the Centre's activities. This kind of research work did not and does not require extensive funding and was always a secondary activity to the Experimental research carried out in the Centre. This is in contrast to the Physics Department at Quaid-i-Azam University which was built up from a Theoretical Physics base. Prior to the explosion of the internet in the 1990s much of the problems and difficulties facing this research activity had been one of isolation. Regular contact with the international research community abroad was difficult as travel facilities were very limited and literature not easily available. In this regard the Federation Agreement between the Centre for Solid State Physics in Lahore and the Abdus Salam International Centre for Theoretical Physics in Trieste, Italy was an important way for research staff to maintain continuity in their research work and to develop new directions in their work.

Theoretical research opportunities within Pakistan are now much enhanced with the availability of research literature through the internet and the HEC digital library initiative but this potential has not been adequately exploited due to a very small research base. However this development will take time and a research culture can grow once continuity is assured.

Furthermore the importance of theory for experimental research has consistently been neglected within the Centre and perhaps within the wider Physics community and the scientific establishment within Pakistan. The dichotomy between theoretical and experimental Physics has been interpreted as if experimental work does not require a theoretical background and understanding. Experimental research is given direction and meaning by addressing theoretical questions and in this way theory may suggest experiments and experiments may test the validity of theory. Similarly experiments may raise theoretical questions which need to be addressed. The interaction between theory and experiment lies at the heart of the scientific method. Some experimental work may be descriptive in character but good experimental work addresses theoretical issues. A narrow focus on publication number will vitiate against any progress towards quality research. Quantity and quality will need to progress hand in hand

Computer Facilities

The Centre in the 1980s was one of the first departments in the Punjab University to acquire computer facilities and eventually the present day Personal Computers (PCs). Dr. Naveed Malik was then a member of staff in the Centre and was instrumental in these early developments. These were the days before the explosion of the Internet in the 1990s and the advent of email that we all take for granted today. In the 1980s the computer facilities in the Centre were unmatched in the University. Today the facilities in the Centre unfortunately are lagging far behind other departments.

However this is not to say that the Centre has not benefitted from the overall advancement of computer facilities within Universities in the last five years. The availability of the internet, the provision of research literature more recently through the HEC Digital Library programme have impacted positively on the working of the Centre. This raises an important question of why the initial promise of the Centre has not been maintained and the Centre for Solid State Physics is anything but the leading department in the university with regard to computer facilities. The efforts of the HEC in this regard need to be complemented by a vision and drive at the institutional level.

PhD programme

The Centre has also benefited from the HEC initiated PhD program in the country. Within the last few years the provision of PhD scholarships for both indigenous and foreign training and the availability of study leave have meant that some of the best students have now been attracted towards pursuing PhD research work. Previously the PhD programme in the Centre was much more limited and was not able to attract the best M.Phil students of the Centre to pursue further studies indigenously. The availability of research literature through the internet has impacted positively on the PhD programme of the Centre. However it can be said that the impacts of these initiatives have not been up to the initial promise that was expected of the Centre.

Critical Issues

What have been the weaknesses in the attempt to build a research institution such as the Centre? Why has the early promise of a thriving, active and vibrant institute not been sustained?

Problems of staff recruitment

The Centre presently (2007) has a staff strength of 4 Professors(PhDs) and 4 Lecturers(M.Sc/M.Phil). This staff strength peaked at about 13 PhDs in the 1990s.

The first thing to notice is that the staff of the Centre does not have a continuous spectrum of staff from senior to junior but in fact has a small number of junior staff

and a small number of senior and experienced staff nearing retirement with no staff in between these two extremes. This is a very unhealthy state of affairs which does not bode well for the future of the Centre. How did this situation arise?

Much of the recruitment of staff in the Centre took place in the 1970s. Pakistani scientists were then willing to return home after completing a PhD abroad. As a Centre of Excellence the emphasis in the Centre has been on recruiting PhD qualified staff. Locally produced PhDs have been few in number and they need exposure abroad to gain experience and depth. Foreign qualified PhDs have not been attracted towards working in the Centre. Partly the problem has been one of financially attractive packages but partly it is also concerns the character of the working environment. Is the working environment a stimulating and attractive environment for research? Creating the financially attractive packages is easier than creating a stimulating research environment. The ability to create the latter may be a more decisive determinant of success in creating a research institution.

However the Centre has not tried to face the challenge of staff recruitment in any creative manner. Most departments in a University in Pakistan recruit their best students and provide them opportunities for further training abroad. The Centre has never tried to follow this avenue. The best M.Phil students of the Centre were never encouraged to join the Centre and provided incentives for career advancement. Staff recruitments should have been actively pursued rather than relying on poorly advertised and poorly publicised opportunities for young research staff. Many recent newspaper advertisements for jobs in the Centre were not even displayed in the Centre let alone in any other Physics Departments in the country.

In conclusion the recruitment policy of the Centre has been extremely passive and no active search policy has been initiated and one advertisement has followed by another in a very mechanical manner. Perhaps this is best characterised as a problem of vision and leadership by the Director(s) of the Centre. The Director needs to have the power and autonomy to push for staff that he or she feels are needed at a particular point in time. Mechanical formulas for deciding appointments on the basis of merit try to make objective decisions which try to avoid personal judgments and frequently end up as bad choices.

The personal reputation of a Director should depend on the quality of staff he is able to attract and recruit and this will eventually reflect in the scientific profile that an institution achieves in its own community. The Board of Directors appears to have neglected their monitoring role in this respect. They have not tried to dig deeper at the issues facing the Centre and have been satisfied with a superficial role.

In the early days of the Centre young people were recruited and encouraged to work in the Centre. They were viewed as assets to be groomed. Unfortunately the quality of academic leadership has declined to such an extent that talent is now assessed on the basis of its support or threat to the existing administration. Opportunities for advancement can be rapid or denied on these grounds of loyalty and affiliation. This

kind of discrimination does not bode well for the future of the Centre but is perhaps a reflection of the larger feudal culture in which we all work.

Accessibility of research facilities

The Centre has the distinction of having a large number of experimental research facilities. Many of these laboratories were established in the 1970s and were built up by individual scientists and maintained by them in a very protective manner. This meant that access to the laboratories and equipment was closely monitored and controlled in order to maintain the equipment in working order. This is understandable particularly in an earlier period when the scientists were not just users of sophisticated equipment but also had to fulfill the role of engineers to maintain equipment and rectify faults. These days the HEC has provided technical support to maintain existing equipment in working order. However new problems have arisen when the research facilities established by senior faculty have been inherited by the existing staff members. The senior staff members have either departed to new jobs or retired and these facilities are now under the administrative control of staff members who were not responsible for their establishment. Under these conditions it was expected that the use of equipment in the research laboratories would gradually become more open and available to other staff members and research students with the passage of time. However administrative control of these research facilities has resulted in a situation where access to these facilities by research students and other staff members has become more difficult and as a result in house research workers are forced to look elsewhere for their experimental needs. This trend of making common research facilities private property in the hands of administrators is frustrating and detrimental to any initiative in research work. Scientific administrators should facilitate access rather than act as gatekeepers and create impediments. The ability of a laboratory in charge to distribute patronage in the form of easy access has encouraged sycophancy and its converse discrimination. Ultimately it may be concluded that a weak scientific leadership has allowed these retrogressive tendencies to grow and flourish within the Center in recent years.

Relationship between equipment and human resource

Acquiring research facilities is part of a process of designing a research programme. The designing of the research programme should precede the acquisition of research facilities. Without an existing nucleus of research this process is frequently inverted. The research equipment is acquired and subsequently people think about what can be done with the acquired equipment. The Centre's most expensive piece of equipment acquired in the 1970s was a Spark Source Mass Spectrometer. The Centre was able to make this equipment operational and keep it operational for significant number of years after its acquisition. However no significant Physics research was published using this equipment. The impurity content of commercial copper wire was a popular M.Phil research topic during its operational period. The

weakness alluded to here is the lack of attention being paid to designing a research programme and acquiring equipment accordingly.

Another feature of the Centre's history has been the drift away from Condensed Matter research towards research in Material Science. There have been a number of reasons for this drift. Firstly Material Science research is more easily accessible to students with a weaker theoretical background than that required for research in Condensed Matter. As a result acquiring a PhD in Material Science does not entail the same amount of effort required to overcome deficiencies in the undergraduate Physics programme. Secondly Material Science has the further attraction of being more applied and hence "relevant" through its potential applications. As a result the kind of science that is carried out de-emphasises the relation between theory and experiment by negating the importance of theory. Theory is a kind of summary of experiments and expresses the way in which past experiments guide and give meaning to present experiments. Otherwise experimental research can degenerate into a collection of data with little meaning or significance.

As a community of scientific workers the answer we give to the question of why develop research in Universities is expressed by the character of our scientific practice. This may be different from the objectives given in policy documents. In practice most research within the Centre is justified not in terms of scientific questions that are being explored but rather it is justified in terms of applications, relevance to technological change and potential economic impact. If we wish to help develop a scientific culture we must relate experiments to our theoretical understanding. If we are satisfied with contributing to the pool of knowledge then acquiring data without significance may be publishable but will not contribute significantly to developing a scientific culture.

Collaborative Research

One of the popular approaches to initiating research activities in any institution has been and continues to be the idea of collaborative research. The Centre engaged in a collaboration with the Microelectronics Research Centre (MERC) of the Cavendish Laboratory, Cambridge during the 1990s. What was the impact of this collaboration on the development of the Centre? The motivation of this collaboration was to introduce an area of research to the Centre important to current developments in microelectronics. In this case the area was related to the preparation of semiconductor heterostructures and their characterization. However the collaboration did not result in this area of research continuing to grow and develop within the Centre after the conclusion of the collaboration. This experience suggests that creative collaborations requiring a pre-existing nucleus of research work and collaborations can then help this nucleus to grow and take root. However collaborations without a pre-existing nucleus will come and go without any lasting impact. In fact the results of such collaborations tend to be one sided with the developing research institute becoming an appendage of the more developed research institute. The scientific manpower trained and developed during this

collaboration has resulted more in the export of this scientific manpower abroad and this manpower has contributed less to the growth of research activities within the Centre or other research centres within the country. The nucleus of local research needs to identify a direction of research and the growth of this field within Pakistan will indicate the success or failure of the collaboration.

Plagiarism and the Push for Research

The Centre has managed to establish a tradition of regular seminars where research students are required to present their research work. Staff members are also encouraged to present their research interests but in spite of requests, the number of research presentations in the Centre are far below the number of publications of the staff members.

What does this trend indicate? Research publications are now required for the career advancement of staff members. Research publications are more generally intended to advance a particular scientific discipline. Publications are just one form of communication of scientific ideas which should be augmented by popular talks, conference presentations, research seminars and lectures. The emphasis on publications rather than other forms of communication indicate the motivation for much research is personal advancement rather than contributing to the advancement of knowledge.

The extreme manifestation of this trend is in the form of plagiarism. The pressures to publish for the sake of promotion and the monetary gains to be made from more publications have encouraged this dishonest practice. Although the Centre for High Energy Physics (CHEP) at the Punjab University has been the focus of press attention with regard to plagiarism during the year 2007 the Centre for Solid State Physics (CSSP) some years back did discover that a staff member had been engaging in plagiarism. In contrast to the instances in CHEP where in spite of evidence the Punjab University administration attempted to defend the teachers by considering the misdemeanor minor the staff member of the Centre when presented with the evidence of plagiarism voluntarily resigned from the Centre.

Plagiarism is a consequence of the pressures to publish in an environment without an established research culture and in which short cuts to success become imperative. It is also a consequence of the expansion of the internet which has made the easy availability of research literature and provided greater opportunities for this dishonest practice.

Detecting plagiarism with appropriate software has been the focus of the HEC but an alternative approach is to insist that published research work are presented regularly in the research institutions from which they originate and related institutions within Pakistan. This kind of peer review is much more likely to be able to distinguish between genuine research from research that has been plagiarized because of the availability of contextual information to the local audience.

It needs to be recognized that the balance between teacher, researcher and communicator can be different at different stages of development. The early stage of development of a research institute may need to focus on the teaching and communicating role and with the passage of time we should plan for a shift in balance towards research. An early focus on research output may stunt the growth of genuine research.

Conclusions

The issue of building research institutions within Pakistan is constrained by the overall character of the educational system within Pakistan. We cannot build a multistoried building on weak foundations. It is correct to characterise our Universities as transmitting knowledge rather than creating knowledge. But even here the transmission of knowledge has focused on the transmitting of undigested knowledge and its subsequent reproduction in examinations. A genuine transmission of knowledge requires an internalization of knowledge in which the student interacts with the subject of knowledge in an active and creative way. It is not a passive process. The transition from a process of transmission of knowledge to a process of creating new knowledge is especially challenging for our students because of this passive relationship to the object of study that has been fostered in our educational institutions. The difficulty our research students find in solving the problems at the end of each chapter in a text book is a reflection of this lack of internalization of existing knowledge. Beginning science education must emphasise the exploratory character of science and explore what are the processes involved in a scientific investigation rather than the results or conclusions. In this regard it can be said that the journey is more important than the destination.

Above we have talked about the constraints. We always have to work within certain constraints. An awareness of the constraints is important but is not an excuse for inaction. Constraints may make a task more difficult and require much greater effort than in different circumstances. The educational background of science students is one such aspects in which changes in the prior educational experiences can have greater impact than efforts made at the University stage of education.

Have we been able to attract the best talent available into our research institutions in general and the Centre in particular? Many students make academic choices on the basis of career opportunities and this has attracted students towards computer science and applied work in defence related institutions in recent years. In this respect opportunities for a financially attractive career in research have grown only in the last five years. However a small number of students have always been attracted towards the intellectual challenge of scientific research and frequently these have been driven to work abroad due to inadequate financial remuneration.

Training in research cannot be achieved by teaching research as by engaging in research. It is more in the nature of an apprenticeship and building research institutions will be constrained by the size and quality of existing nuclei of research.

As this involves a process, fluctuating policies of a denial of financial resources (drought) followed by a period of extensive availability of financial resources (flood) cannot achieve the desired results. The ability of research institutions to absorb newly available resources for research have been killed in the period of drought. Continuity has been lost. In the case of the Centre the variations in staff strength and the absence of regular recruitments indicate this malaise.

Globally scientific research has been seen as a driving force for technological advance and progress. However, locally this link between research and its applications appears quite limited. Institutions such as PCSIR (Pakistan Council for Scientific and Industrial Research) have not achieved the potential expected of them. Why has this been the case? Many research projects have significant paragraphs devoted to the applications of the research within the country and sometimes the research is justified less by the scientific question it explores and more by the applications or impact on the local economy. Frequently these impacts are not realized because of the nature of the global economy in which Pakistan finds itself embedded. In the case of the Centre this has been reflected in the manner in which the focus of research has drifted away from the field of Solid State Physics towards the field of Material Science. Solid State Physics research has a much more prominent theoretical character while Material Science research has a much more descriptive and applied character. However, the applications although emphasized in funding requests are not realized in subsequent developments within the country. As regards the contribution towards the development of a scientific culture the research related to theoretical issues is likely to have a more lasting and significant contribution to make.

These issues relate to the question of why do we want to build research universities? Are we hoping to build scientific culture which will be important for the development of Pakistan in a long term perspective or are we hoping to provide scientific manpower to fulfill the short term needs of a global economy whose character is taken as given.

References

- Hoodbhoy, Pervez 2007, August. 'Science and the Islamic World'. *Physics Today*. USA: American Institute of Physics.
- Hussain, Faheem 2005, June. 'The Theoretical Physics Group at Quaid-e-Azam University, Islamabad'. *LUMS SSE Newsletter*. Lahore: LUMS.
- Inayatullah, editor 2003. *Towards understanding the state of social science in Pakistan*. Islamabad: COSS.

ASAD ZAMAN

ON IMPROVING SOCIAL SCIENCE EDUCATION IN PAKISTAN

Abstract

How do we arrest the decline of the social sciences in Pakistan? Is it a matter of money or one of sending more students to the West who might then return to teaching at the local universities? In this article I argue that the solution lies elsewhere. Borrowing frames, concepts, and analytical techniques based on the concept of universalism runs a serious risk of imposing alien views on local problems. Moreover, attempts to become 'scientific' require side stepping value judgments of good and bad. The current Western domination of the intellectual scene favours a single route for social science development, and kills all diversity. However, whilst we may borrow as much as we choose, we need to build our own frames that would underpin the social sciences, and this is possible only by reconnecting with our own past.

Introduction

Many authors have lamented the state of social sciences in Pakistan (e.g. Nadeem-ul-Haque (2007) or Inayatullah *et. al.* (2005)). The HEC has also taken note of the lack of significant research, shortage of suitably trained faculty, and created a Committee for Development of Social Sciences and Humanities to find remedies. However, before rushing to solutions, I believe we must take time out for an accurate diagnosis. It has happened all too often that impatient activists have not taken out sufficient time to pause for diagnosis, and have ended up administering the wrong medicine in their haste.

Why is the state of social sciences going from bad to worse in Pakistan? A simple answer, often given, is that there is no money in it. The argument goes as follows: our best and brightest students traditionally chose to study Engineering and Medicine, because these professions offered the best prospects. When MBA's and Computer Sciences started to pay, degrees in these areas also became popular. When Social Scientists start earning well, we will get more enrollments and attract better faculty, and generally improve the state of affairs. Those with market-oriented views, especially popular among economists, believe that market prices are socially optimal. That is, low wages for social science means that social sciences are not very valuable or productive for society. If this is so, then there is no problem to fix. We should not invest resources in areas that are not very productive or valuable. Several prominent educationists have expressed the sentiment that developing countries cannot afford to waste resources on philosophy, literature or soft sciences – these

luxuries can only be afforded by the rich. We must concentrate on science, technology, infrastructure etc. as the route to riches.

This diagnosis suggests that we treat the problem with benign neglect. This is not only naïve, but dangerously wrong. In fact, the poor health of the social sciences is an extremely serious problem, solving it is a high priority issue, and our approach to the solution will significantly impact the future of Pakistan. At the same time, the problem is complex and multi-dimensional, and solutions will require coordinated efforts on several fronts to succeed. In *Education in Pakistan*, Qureshi (1975) described the historical process, which led to rote-learning, and a meaningless education system aimed only at getting jobs, rather than advancing learning and creating the thrill of advancing the frontiers of knowledge. In this short article, it is not possible for me to discuss all of these various dimensions. Instead I focus on just one aspect, namely the extent to which we should borrow from Western social sciences to improve the state of affairs in Pakistan.

Western Universalism

During the historical phase called ‘the Enlightenment’ of the West, the idea that all societies follow the same trajectory was born. The West was the most advanced and developed of all societies. Other societies were primitive and under-developed. As these other societies matured and grew, they would follow the same stages that were followed by the West, and eventually become like modern Western societies. Early thinkers like Comte (1855), and more recent ones like Rostow (1978), described the stages in growth from primitive society to modern ones in a ‘logical’ sequence. This set of ideas is called “Western Universalism.” The term ‘developing country,’ which has replaced ‘under-developed country’ also reflects this idea; see Wallerstein (2006).

Social science is the study of human experience. It attempts to find patterns displayed, and commonalities in human interactions in small and large groups. The idea of Western universalism suggests that the Western experience is relevant for all of humanity – any patterns and commonalities of European history will eventually be found in all societies as they develop. In this case, even though social science developed in the West, it can be universally applied to all societies.

Substantial evidence has emerged that Western Universalism is wrong. All cultures are not essentially the same as primitive Western cultures, nor do they all follow the same development trajectories. The attempt to fit all societies onto the European pattern leads to clearly recognizable biases known as “Eurocentricism.” Many aspects of the European experience are unique to Europe and were not (and likely will not be) experienced by other societies (and vice-versa). Insights of social science based on these particular European experiences are peculiar to the West and cannot be generalized to other societies. Many authors have documented problems and errors resulting from Eurocentricism; see for example, Hodgson and Burke (1993), or Marglin (2007). Mitchell (2002, p. 7) writes that “The possibility of social science is based upon taking certain historical experiences of the West as the template for a

universal knowledge.” This means that social science as developed in the West is Western Social Science, and we cannot safely borrow insights from the West to apply to our society, which has an entirely different history, and entirely different set of potential future trajectories.

There are many peculiarities and quirks of European history which have impacted on the development of social science in the West. I focus on some of the important divergences below. My goal is not to provide a deep analysis of the Western experience, but merely to establish that it differs significantly from ours. To the extent that this experience impacts on Western formulation of social science, we cannot profitably learn from it, and must formulate an understanding of history based on our own experiences.

Western Transition to Secular Thought

Violent religious conflict, and disenchantment of key intellectuals with religion led to the emergence of secular thought in Europe. A brief history is given in Pannenberg (1996), while McGee (1948) gives a detailed history for Britain. Instead of religious principles, society was to be organized using reason and factual knowledge. One problem that immediately emerged was that values could not be derived from facts and logic, as Hume recognized early. At the same time, rules and regulations were essential for a society to function. There were many attempts to find a secular basis for morals; for example *The Theory of Moral Sentiments* by Adam Smith, and *An Enquiry Concerning the Principles of Morals* by David Hume. Among many approaches, a prominent solution was the “social contract,” a set of rules which all members of a society agreed to live by (though this agreement was not formal and explicit, and the rules were also not written down or even clearly articulated). The ‘rule of law’ and a state empowered to enforce the law became the substitute for morality as given by religious rules. Current European political thought is firmly based on the social contract.

There are two major weaknesses of social contract theories. One is that there is no absolute basis for morality. Whatever the society agrees as the social contract becomes moral. Premarital or extra-marital sex, pedophilia, slavery, bull-fighting, boxing, putting out contracts for assassination, torture, etc. may all be considered moral or immoral according to majority vote. The second weakness is that there is no inner compulsion on anyone to follow the rules. Unlike the moral code, which is binding on individuals by God, and must be followed regardless of whether or not someone is watching, the social contract is to be enforced by the law, the courts and the government. The realization that the social contract is all that stands between a civilized and human society and reversion to barbarism – one cannot assume any standards for human moral conduct mandated by religion – led to greater respect for artificial, variable, incomplete and often incorrect rules embodied in the code of law. The establishment of the ‘rule of law’ in European states did provide a secular basis for regulating states and was a tremendous achievement. However the weaknesses of the social contract can be illustrated by noting that in the Western

judicial system, justice is an incidental byproduct of a mediated struggle between opposing interests. An excellent discussion of the ethical issues is given by a panel of lawyers in “A Case of Competing Loyalties” in *Stanford Magazine* Fall 1983 (p38-43). All lawyers on the panel agreed that a lawyer defending a male client known to him or her to be guilty of rape, nonetheless had the responsibility to destroy the reputation of the female victim if this was the best possible defense. All agreed that the Western criminal defense system was an adversarial process with artificial boundaries, and not a pure search for truth.

Emergence of Social Sciences in the West

Manicas (1989) and Gordon (1991) have both written books on different aspects of the history and philosophy of social sciences. These provide substantial details on European history and how it has influenced the emergence of social sciences. One aspect of this history is Newton’s discovery of gravitation, which was universally admired. Many attempts were made to follow his methodology of using one law (or an economical set of principles) to explain a large and diverse set of phenomena. Economics came closest to this goal in setting up selfishness as the single motive which drives humans, and using this to explain all economic phenomena. Mirowski (1989) has written on how economics was self-consciously modeled on physics. Recent investigations of behavioral economics show that this simplification of human behavior is too extreme, and fails to adequately explain many phenomena; see, for example, Camerer (2003) or Kagel and Roth (1995). Attachment to the mathematical methodology has led to increasing formalism and decreasing relevance in modern economic theory. Blaug (1998) cites a leading editor of an economic journal, who stated that “.. few economists ask themselves what are the crucial economic problems facing society.” In political science, historical and qualitative approaches which recognize the complexity of human behavior have been marginalized. The dominant approaches use mathematical approaches based on ‘rational actor’ models and threatens the earlier classical approach with extinction. In recent dialogue and controversy, documented in *Perestroika* by Monroe (2005), political scientists have pleaded for a live and let live approach, to allow both traditions to survive. Slavish imitation of Western methodology would lead us to reduce humans to selfish automata, and would reduce our understanding of human behavior instead of being illuminating about our society.

Western disenchantment with religion led them to develop a theory of knowledge based solely on facts and reason – this has been labeled ‘empiricism’ or ‘positivism.’ Superficially, this seems like a very attractive proposition; what else is there, apart from facts and reason, on which to base knowledge? Deeper exploration, carried out in the West, leads to several difficulties. One difficulty is that values or social norms cannot be derived from facts and logic. On the other hand, conduct of social policy requires such norms, to differentiate between the good and the bad and to conduct policy to achieve the good and avoid the bad. Efforts of social scientists to be “scientific” have led to hidden moral values which permeate Western formulations and frameworks for social science. These implicit and unexplored background

values are often in conflict with traditional values in Pakistan. Foucault's views on this problem have been articulated as follows: "modern human sciences (biological, psychological, social) purport to offer universal scientific truths about human nature that are, in fact, often mere expressions of ethical and political commitments of a particular society. For a specific example, values implicit in the apparently sterile mathematical and value-neutral framework of economics have been exposed in Nelson (2001), Wilber (2003) and Blaug (1998). In Pakistan we can avoid this confusion and conflict, and base social science directly on openly acknowledged and commonly agreed upon Islamic values. But to do this would require formulating social sciences in a way different from that of Europe.

Demarcation of social sciences into different fields and setting up of boundaries between different fields was also the outcome of particular historical processes in the West. Manicas (1989) has given details of competing traditions, and how accidents of history led to the dominance of one school of thought over others. He has also suggested that as a whole, the 'wrong' set of ideas have gained prominence in the social sciences, and major difficulties in understanding the world and human interactions have emerged as a result. Many have echoed his call. As a simple illustration, consider the field demarcation between psychology and economics. Economists refuse to consider the issue of how wealth and material goods affect the sense of satisfaction, well-being, contentment or happiness that people experience, on the ground that these questions belong to the realm of psychology. They consider it as part of their profession to only consider how people can become wealthy. Recent inter-disciplinary investigations have revealed that attitudes towards wealth, methods by which it is acquired, as well as interpersonal dispositions, can play an extremely important role in determining the satisfaction obtained by pursuit of wealth. Lane (2001) and Layard (2005) have documented how vast increases in wealth in Western societies have failed to increase contentment, satisfaction and sense of well-being. This has extremely serious consequences for economics – if the determined effort being made to increase GNP and wealth has detrimental consequences for human welfare, then what is the point of it all? At the very least, economists must pay attention to these issues, to ensure that the pursuit of wealth has a point in terms of increasing human satisfaction. Recently, the Gulbenkian Commission on the Restructuring of the Social Sciences (Wallerstein 1996) reported on the need to change the methodology, approach and field boundaries in Western social sciences. It made specific recommendations for different fields based on a detailed analysis.

This situation creates an opportunity for us. There is substantial inertia in Western academia which ties them to conventional approaches. Since we have no investment in past approaches, we are free to "leapfrog" (like the Japanese did in the steel industry) and adopt new approaches to the subject matter. Blaug (1998) has written about the dominance of overly mathematical and irrelevant research produced by economists in USA and Europe, and how moving back towards relevance is difficult because of institutional structures which promote such research.

The Fragmentation of Knowledge in the West

A major problem which affects social sciences acutely is the 'fragmentation of knowledge.' This has some relation to the previous issue discussed – artificial discipline boundaries prevent the synthesis of useful information because different pieces lie in different disciplines. Vartan Gregorian (1993), the president of Brown University, discusses many of the problems created by this fragmentation:

specialization, instead of uniting human beings into a general community of values and discourse, has by necessity divided them into small and exclusive coteries, narrow in outlook and interest. It isolates and alienates human beings. Social relations, as a result, cease to be the expression of common perceptions and common beliefs; they are reduced to political relations, to the interplay of competitive, and often antagonistic, groups. Specialized education makes our students into instruments to serve the specialized needs of a society of specialists.

It is generally thought that the fragmentation of knowledge has been caused by the explosion in the quantity of knowledge. There is so much knowledge that no one can know all of it and hence unify it. This is a misconception. From the earliest times, specializations in medicine, architecture, agriculture, philosophy, etc. have been known and recognized as necessities. The presence of an occasional exceptional individual who could know it all (or have broad spectrum knowledge) is neither necessary nor sufficient for the unity of knowledge.

In fact, knowledge is unified by purpose. Having a sense of the broad outlines of human endeavor, and how it serves the human race, one can have an idea of how his/her efforts fit into this big picture. Current conceptions of science militate against this unity. Economists claim their discipline is "positive." As scientists, they can only assess and explain the factual consequences that will result from different types of economic policies. Judging which policy is better or worse is a normative act, which should be left to policy makers. This type of insulation and fragmentation (which has nothing to do with the explosion of information) has disastrous consequences. If policies enrich a few and impoverish many, or damage the environment and profit the multinationals, or lead to debt and starvation in poor African countries, the economist has nothing to say about it in his status as a scientific economist. The physicist who works round the clock to produce an atom bomb claims that he is not responsible for how it is used. A biologist has discovered high yield varieties of rice which could feed the whole world. However, distribution, publicity, pushing for policies for adoption etc. are not within his specialty. Instead, if a multinational hires him for developing a variety that is not fertile (so that it will be able to sell new seeds every season), he will do the work for a salary, and not ask whether this development will be harmful to the interests of humanity as a whole.

With increasing secularism, and the basing of knowledge on facts and reason alone, norms and values came to be regarded as unscientific. The glue of the common

purpose of service of humankind binds the strands of knowledge together. The idea that life arose by an accident and will perish in another accident denies all purpose to human existence and dissolves this glue, leading to the fragmentation of knowledge. Bertrand Russell (1903), a leading philosopher and architect of dominant modern worldviews has expressed himself poetically on this issue as follows:

That man is the product of causes which had no prevision of the end they were achieving; that his origin, his growth, his hopes and fears, his loves and his beliefs, are but the outcome of accidental collocations of atoms; that no fire, no heroism, no intensity of thought and feeling, can preserve an individual life beyond the grave; that all the labours of the ages, all the devotion, all the inspiration, all the noonday brightness of human genius, are destined to extinction in the vast death of the solar system, and that the whole temple of Man's achievement must inevitably be buried beneath the debris of a universe in ruins -- all these things, if not quite beyond dispute, are yet so nearly certain, that no philosophy which rejects them can hope to stand. Only within the scaffolding of these truths, only on the firm foundation of unyielding despair, can the soul's habitation henceforth be safely built.

Abandonment of Mission of Character Building

Reuben (1996) writes, "Late nineteenth century colleges had the explicit goal to build character and promote morality (understanding of duties to family, community, country and God) while at the same time contributing to the advancement of knowledge. These two goals proved to be incompatible." In a historical process traced by Reuben, universities tried many different methods for character building before finally abandoning the goal and turning purely to the pursuit of knowledge. This historical study of development and evolution of Universities in the USA is an illuminating book, which contains many useful lessons for structuring higher education in Pakistan.

Religious organizations were responsible for founding and funding the vast majority of colleges in the USA. Sectarian promotion policies were seen to lead to loss of academic excellence, and slowly abandoned in favor of tolerance. This policy of tolerance created a dilemma for promotion of morality. With faculty of differing religious views, character building and morality could not be promoted on the basis of a common religious platform. Instead, morality was bound to the "scientific method," on the basis of the perception that: "teachers who did research would impart their enthusiasm to students. In addition, they would also impart the scientific values of unbiased observation, openness, tolerance, sincerity and commitment to students." Efforts were made to find scientific bases for religion and morality. Natural theology, apologetics, scientific justifications for moral principles, and many other intellectual endeavors were part of this movement. At the same time, the recognition that science was supposedly value free led the social sciences to increasingly distance themselves from values and norms. Instead of

passionate advocacy of measures to promote human welfare, social sciences moved towards analytical, descriptive and detached observation. This move undercut efforts to base morality on science, and ultimately, after many efforts in different directions, the whole effort was abandoned in USA universities.

Loss of the high moral purpose of universities has been sensed and regretted by many commentators. Many alternatives have been proposed and tried but none has proven successful. Thus students can learn how to manufacture atom bombs in modern universities, but not a word about the morality of killing and torture. The grave consequences of this have been graphically depicted in Glover (2001) in the form of countless atrocities committed in a world which has lost its moral bearings. Finding a solid basis for instilling morals in the coming generations is an urgent need, but it seems impossible in the Western context. Here in Pakistan, we have agreement on a religion, and therefore the same target is much easier to achieve. However, in imitating the Western educational system, we lose the possibility of doing so.

Lessons for Social Science Education in Pakistan

The main thrust of this essay has been to point out deficiencies in the Western Social Sciences, and suggest that blind imitation is not the route to improving social science education in Pakistan. Instead of advancing the discussion, this actually takes us back one step; we deny the efficacy of one simple, concrete, and often recommended plan of action, without having proposed any replacement. Improving social sciences in Pakistan would be a lot easier if it was just matter of sending enough students to the West to get their doctorates and then hiring them in local universities as teachers. This type of strategy has not worked fine in the Physical Sciences, not to speak of Social Sciences, for reasons already discussed.

What then is the alternative? It is well known that imitating an existing technology is substantially easier than inventing a new one. Our discussion suggests that despite its difficulty, that is what is needed. Borrowing frames, concepts, analytical techniques, etc. from Western social sciences runs serious risks of imposing alien views on local problems. For example, the Marxist concept of conflicts between capitalists and labourers are deeply grounded in Marx's observations of industrializing England, and attempts to impose these categories into the Pakistani context do violence to the ground realities of Pakistani society. Class struggles here occur along entirely different lines. Examples of this type could be multiplied. Our basic suggestion is to dispense entirely with the Western categories and concepts, and look at our own society, find our own prioritization for the problems which face us, and find our own solutions. In the process of solving real problems facing Pakistani society, we will automatically create a body of knowledge which we could label "social science." This may well have categories of overlap and similarity with Western social sciences, but will also have its points of difference and singularities. Creation of a new set of sciences from scratch is a mammoth task, and daunted by this, many authors who came close to realizing the necessity of this backed away from grasping the full implications of their own analyses. Writings which debate these issues fall within the broad category of the project of

“Islamization of Knowledge” – see for example Al-Attas (1978) and Al-Faruqi (1982) – widely considered to be an important current need of Muslims.

After having stated the main issue in a stark and blunt form, I would like to add some refinements and qualifications. Serious intellectual endeavor requires a substantial amount of discipline and training. Lest there be doubt, let me state that I am a great admirer of the intellectual traditions of the West. Training our scholars in Western social sciences would be a valuable investment, as it would provide them with experience in rigorous analysis and structured argumentation. While much of the substance of Western social sciences is derived from Western experiences and hence cannot be imported, the form of the analysis, the logical rigour and empirical orientation, are very much worth emulating. There is a lot we could learn from post-Modernism, which develops an internal Western critique of much of Western social science. Our colleagues in India have done a lot of work on developing ‘subaltern studies,’ and many other disciplines where they have challenged Eurocentric views and developed and presented their own alternatives. Most importantly, we have our own tradition of Islamic scholarship, which has unsurpassed depth and complexity. Although it has been somnolent in the recent past, there are many signs of its revival. Extending and adapting this intellectual tradition to cope with modern problems would provide a methodology rooted in our own history, with a much better chance to flourish than alien implants. Just as our Islamic tradition has in the past been able to creatively borrow and adapt materials from Greeks, Indian, and many other intellectual corpora, there is no reason that we cannot absorb and assimilate relevant Western insights. In closing, I would note that I have focused almost exclusively on one particular problem, the extent to which we may borrow from Western social sciences, in developing social sciences in Pakistan. A large number of other relevant issues have been ignored. Qureshi (1975) has given an excellent analysis of many of the dimensions of the problem at book length and suggested solutions. Even though the book is old, the problems discussed remain pretty much as described. It is sad that despite its crucial importance to the future of the nation, no real progress has been made towards solving these problems in decades.

References

- Al-Attas, Syed Muhammad Naquib 1978. *Islam and Secularism* ISBN 983-99628-6-8.
Al-Faruqi, Ismail 1982. *Islamization of Knowledge*. Herndon, VA: IIIT.
Blaug, Mark 1998. Disturbing currents in modern economics *Challenge* May-June.
Camerer, Colin F. 2003. *Behavioral Game Theory: Experiments in Strategic Interaction*. Princeton, N.J.: Princeton University Press.
Comte, Auguste 2003. *Positive Philosophy of Auguste Comte, Part I* (1855). Translated by Harriet Martineau. Kessinger Publishing.
Glover, Jonathan 2001. *Humanity: A Moral History of the Twentieth Century*. Yale.
Gordon, Scott 1991. *The History and Philosophy of Social Science*. New York: Routledge.
Gregorian, Vartan 1993. ‘Technology, Scholarship, and the Humanities: The Implications of Electronic Information,’ Keynote Address. <http://www.cni.org/docs/tsh/Keynote.html>.

- Haque, Nadeem ul 2007. 'The Sad Plight of the Pakistani Scientist,' address at PIDE, Islamabad July 16th.
- Hodgson, Marshall G. S. and Edmund Burke 1993. *Rethinking World History: Essays on Europe, Islam and World History* (Studies in Comparative World History).
- Inayatullah, editor 2005. *Social Sciences in Pakistan: A Profile*. Islamabad: COSS.
- Kagel, John H. and Alvin E. Roth (editors) 1995. *The Handbook of Experimental Economics*. Princeton, N.J.: Princeton University Press.
- Lane, Robert E. 2001. *Loss of Happiness in Market Economies*. Yale University Press.
- Layard, Richard 2005. *Happiness: Lessons from a New Science*, Penguin Press.
- Lowney, Chris 2005. *A Vanished World: Medieval Spain's Golden Age of Enlightenment*. Free Press.
- Manicas, Peter T. 1989. *A History and Philosophy of the Social Sciences*. Blackwell Publishers.
- Marglin, Frederique Appfel 2007. *Dominating Knowledge: Development, Culture and Resistance*. Oxford University Press.
- McGee, John Edwin 1948. *A History of the British Secular Movement*.
- Menocal, Maria Rosa 2003. *The Ornament of the World: How Muslims, Jews and Christians Created a Culture of Tolerance in Medieval Spain*. Back Bay Books.
- Mirowski, Philip 1989. *More Heat than Light: Economics as Social Physics, Physics as Nature's Economics*.
- Mitchell, Timothy 2002. *Rule of Experts: Egypt, Techno-Politics, and Modernity*. University of California Press.
- Monroe, Kristen R. 2005. *Perestroika*. Yale University Press.
- Mustafa, Akyol 2004. 'What's Right with Turkey' Front Page Magazine. www.thewhitepath.com/archives/2004
- Mustafa, Akyol 2006. "Symposium on Islam and Religious Freedom," Front Page Magazine. <http://www.frontpagemag.com/Articles/ReadArticle.asp?ID=24999>
- Nelson, Robert H. 2001. *Economics as Religion: from Samuleson to Chicago and Beyond*, Pennsylvania State University Press.
- Pannenberg, Wolfhart 1996. 'How to Think About Secularism' *First Things* 64 (June/July): 27-32.
- Qureshi, Ishtiaq Hussain 1975. *Education in Pakistan*. Karachi: Ma'aref Publishers.
- Reuben, Julie 1996. *The Making of the Modern University: Intellectual Transformation and the Marginalization of Morality*. University of Chicago Press.
- Rostow, W. W. 1978. *The World Economy: History & Prospect*: 657. UT Austin.
- Russell, Bertrand 1903. 'A Free Man's Worship'.
- Wallerstein, Immanuel 1996. *Open the Social Sciences: Report of the Gulbenkian Commission on the Restructuring of the Social Sciences*. Stanford: Stanford University Press.
- Wallerstein, Immanuel 2006. *European Universalism: The Rhetoric of Power*. New Press.
- Wilber, Charles K. 2003. 'Ethics In Economic Theory' *post-autistic economics review*. (20) <http://www.paecon.net/PAERreview/issue20/Wilber20.htm>.
- Zaman, Arshad 1989. 'Why Development Fails'. *Pakistan Administration*. Lahore: Pakistan Administrative Staff College.

RIAZ HASSAN

RELIGION AND GOVERNANCE IN A GLOBALIZING WORLD: A Comparative Study of Muslim Countries

Abstract

The relationship between politics and religion in Muslim countries has become a much debated and discussed issue among scholars of Islam and Muslim societies. A commonly stated view of many Western and Muslim scholars and activists is that Islam is not only a religion but also a blueprint for social order, and therefore encompasses all domains of life, including law and the state. It is then argued that this striking characteristic is what sets Muslim societies apart from Western counterparts that are based upon the separation of state and religion. After examining these and related issues, the paper reports empirical evidence, which shows that institutional configurations form an important factor in mediating and articulating the nature of the relationship between religion and politics in Muslim countries. Two types of configurations—undifferentiated and differentiated—are identified. Undifferentiated institutional configurations refer to social formations in which religion and the state are integrated. In contemporary discourse, such a formation is labeled as an Islamic state. In contrast, differentiated institutional configurations refer to social formations in which religion and politics—by constitutional requirement or by tradition—occupy separate spaces. The empirical evidence discussed in the paper indicates that, in general, the trust placed in religious institutions and consequently their public influence are greater in Muslim countries with differentiated institutional configurations than in those with undifferentiated ones. In general, trust in religious institutions is directly related to trust in political institutions. The paper offers some theoretical underpinnings for this and other findings, and argues that undifferentiated Muslim societies tend to take on the characteristics of differentiated societies over time. An Islamic state, therefore, might also provide a route to the social and political development of a Muslim society in which religion and politics coexist in an autonomous but mutually cooperative relationship.

Introduction

What types of political systems are compatible with Islam? Are Islam and democracy compatible? In general, the relationship between politics and religion in Muslim societies has become a focus of intense debate among scholars of Islam. A commonly stated view of many Western and Muslim scholars of Islam is that Islam is not only a religion but also a blueprint for social order, and therefore encompasses all domains of life, including law and the state (Maududi 1960; Lewis 1993; Huntington 1993a; Rahman 1982; Weber 1978; Gellner 1981). It is further argued that this characterization sets Islamic societies apart from Western ones, which are based upon the separation of state and religious institutions.

In reality, Muslims have experienced a wide range of governments including the Caliphate, monarchy, military dictatorship, dictatorship, communism, national socialism, theocracy, religious fascism, and democracy. This would suggest that, like other religious traditions, especially Christianity, Islam possesses intellectual and religious resources that could provide the foundation for a wide range of political systems. According to King Fahd of Saudi Arabia, the democratic system prevalent in the West is not appropriate for the Middle East because the election system has no place in Islam. The Islamic creed calls for a government of advice and consultation, and holds the ruler fully responsible before the people. His views are widely supported by Islamists such as Sayyid Abul A'la Maududi and are echoed by fundamentalists who seek to impose an authoritarian Islamic government (Esposito 2004). However, Islamic scholar Khaled Abou El Fadl takes a different position, claiming that

democracy is an appropriate system for Islam because it both expresses the special worth of human beings—the status of vice regency—and at the same time deprives the state of any pretence of divinity by locating ultimate authority in the hands of people rather than the *ulema*. (Abou El Fadl 2004:36)

Other Muslim leaders take different reformist positions. Former Iranian president Mohammad Khatami has suggested that existing democratic systems do not follow one path. Just as democracy can lead to a liberal or socialist system, it can also accommodate the inclusion of religious norms in the government. He was obviously referring to the Iranian model (Esposito 2004). Former Indonesian president Abdurrahman Wahid has suggested that Muslims have two choices: to pursue a traditional, static, and legal-formalistic Islam, or to follow a more dynamic, cosmopolitan, universal, and pluralistic Islam. He rejects the notion of an Islamic state, which he regards as a 'Middle Eastern tradition.' For Indonesia, he advocates a moderate, pluralistic, and tolerant Islam that treats Muslims and non-Muslims equally, and one that can form the basis of a state in which religion and politics are kept separate (Wahid 1983).

These differing views of prominent Islamic political and intellectual leaders further illustrate that the Islamic world might not offer an ideal functioning democracy, but neither does it offer an ideal functioning Islamic polity. Though their views differ, these views essentially reflect the political reality of the Muslim world, which encompasses a variety of 'functioning' political systems. Are these differences indicative of vastly different political attitudes? The most comprehensive and up-to-date empirical evidence suggests otherwise. A comparison of political values and attitudes shows remarkable similarities between Muslim and Western countries. For example, the approval rates posted for indicators of 'democratic performance' and 'democratic ideals,' and the disapproval rates posted for strong leaders are identical for Muslim and Western countries. There are, however, significant differences in rates posted for social values (approval of gender equality, homosexuality, abortion, and divorce). Another difference lies in the significantly greater disapproval rate posted for religious leaders in Western countries: 62%, as opposed to 39% in

Muslim countries. (For a description of the indicators and further details, see Norris and Inglehart 2003.)

While a comparison of political and social values in Muslim and Western countries could shed significant light on current debates concerning the Clash of Civilizations theory, as formulated by American political scientist Samuel Huntington, it does not provide many insights about how attitudes toward various institutions, in particular Islamic ones, vary in Muslim countries. This was one of the main foci of my research. I was particularly interested in exploring differences in attitudes toward key Islamic institutions and the sociological factors producing these differences. It is to this analysis I now turn. As mentioned earlier, a commonly stated view of many Western and Muslim scholars is that Islam encompasses all domains of life, including law and the state, and it is this characterization that sets Islamic societies apart from Western ones.

A number of scholars of Muslim societies, including American historians Ira Lapidus (1996) and Nikki Keddie (1994), have disputed this characterization of Muslim societies and have pointed out that, notwithstanding several examples of state control of religion in Western societies, these differences are commonly used to account for the different developmental trajectories of Western and Islamic societies. Western societies, with their separation of church and state, of civil and religious law, are said to have promoted an autonomous domain for secular culture and civil society, which together form the bases of modernity. In Islamic societies, the lack of differentiation between the secular and the sacred has inhibited such development (Weber 1978; Crone 1980; Lewis 1993; Huntington 1993a or 1993b).

After reviewing the evidence concerning the separation of state and religion in Islamic history, Lapidus (1996) concludes that the history of the Muslim world reveals two main institutional configurations. Characteristic of lineage or tribal societies, the undifferentiated state-religious configuration can be found in a small number of Middle Eastern societies. In contrast, the historical norm for agro-urban Islamic societies is an institutional configuration that recognizes the division between state and religious spheres.

Despite the common statement (and the Muslim ideal according to some) that the institutions of state and religion are unified, and that Islam is a total way of life that defines political as well as social and family matters, most Muslim societies did not conform to this ideal, but were built around separate institutions of state and religion (Lapidus 1996:24). Keddie (1994: 463) has described the supposed near-identity of religion and the state in Islam as “more a pious myth than reality for most of Islamic history.” Similar views of Islamic history have also been advanced by others (Zubaida 1989; Sadowski 1997; Ayubi 1991).

Relationship between State and Religion

The weight of historical scholarship indicates that the institutional configurations of Islamic societies can be classified into two types (Hassan 2002): (1) differentiated social formations (i.e., societies in which religion and state occupy different spaces), and (2) undifferentiated social formations (i.e., societies in which religion and state are integrated). While a majority of Islamic societies have been and are ‘differentiated social formations,’ a small but significant number of them have been and are ones that can be classified as ‘undifferentiated social formations.’ A label commonly used in contemporary discourse for undifferentiated Muslim social formations is the ‘Islamic state.’

Irrespective of the historical evidence, relations between the state and religion are an important issue in contemporary Muslim countries. Many Muslim countries are a product of the process of decolonization in this century, during which nationalist movements were spearheaded by relatively secular leaders. These new states have defined their identities in nationalist terms and, in many cases, have preserved secular legal, educational, and political institutions inherited from the colonial era. However, Islamic revival movements have emerged in many Muslim countries and, in general, they denounce the trend toward secularization, calling for the return to a state that represents and embodies Islam and enforces an Islamic way of life (Lapidus 1996; Beinin and Stork 1997; Esposito 1992; Marty and Appleby 1993).

Whereas in the past only Saudi Arabia defined itself as an Islamic state, now countries such as Iran, Pakistan, Afghanistan, and Sudan have become or aspire to become Islamic states, and while all of them define themselves and function as Islamic states, they differ from one another in many significant ways. Algeria is currently enduring a bloody struggle for the establishment of an Islamic state. Similar trends appear to be occurring in predominantly Muslim regions of Nigeria. In Turkey, the power of the Kemalist secular state has come under muted challenge from the rise of Islamic parties as dominant political actors, as signified by the now ruling Justice and Development Party.

The relationship between religion and politics is influenced by the internal dynamics of Muslim societies. These dynamics are grounded in the relationship between the two traditions of Islam, namely, the ‘high Islam’ of the *ulema* and the ‘folk’ or ‘popular Islam’ of the masses. These two styles or traditions of Islam provide a built-in mechanism for self-rectification and purification, which periodically manifests in ‘differentiation’ and ‘de-differentiation’ between religion and politics in Muslim countries. The dynamics of the relationship between these two traditions offer the possibility for Muslim societies to move from one to the other (Gellner 1981, 1992; Rahman 1982; Beyer 1994; Hassan 1987, 2002).

Institutional Configurations and Trust in Religious Institutions

Although relations between the state and religious institutions represent a significant concern for the Islamic world, there has been no empirical study of the attitudes of Muslims toward different institutional configurations. The issue here is whether religious institutions enjoy more or less trust in the public mind in differentiated Muslim social formations (in which religion and the state are separate) than in undifferentiated Muslim social formations (in which religion and the state are closely integrated). Public trust in institutions of the state and civil society is an important symbol of the political legitimacy of the state and its agencies. Drawing from empirical evidence gathered as part of my multi-country study, we are now in a position to examine this issue by comparing data about the level of trust in the state and civil society institutions in different Muslim countries, and about the level of trust in undifferentiated and differentiated Muslim social formations.

The respondents in all seven countries were asked how much trust they had in key institutions of the state and civil society. The specific question that elicited this information was: "I am going to name a number of organizations. For each one, could you tell me how much you trust them to tell the truth and to do what is best for the country? Is it a great deal of trust, quite a lot of trust, not very much trust, or none at all; or do you not know?" Readers who are familiar with the World Values Survey will recognize that this is a modified version of the question posed there. The institutions about which the respondents' opinions were sought were the following:

- *Ulema*
- Parliament
- Press
- Universities
- *Imam masjid*
- Courts
- Television
- Schools
- *Pir / kyai*
- Civil service
- Major companies
- Intellectuals
- Political parties
- Armed forces

In Iran, the institutions of *ulema*, *pir*, and the armed forces were excluded from the main survey (number of respondents = 469), but they were included in an exploratory survey (number of respondents = 66).

Trust in Institutions

As mentioned earlier, relations between the state and religious institutions and communities are a central concern in the Islamic world. It is therefore rather surprising that, given the importance of this issue, there have been no systematic empirical investigations of the subject. In this respect, the findings reported here fill an important gap in our knowledge. The general issue examined was the level of trust in religious institutions and the institutions of civil society, in undifferentiated Muslim social formations (i.e., Islamic states) and in differentiated Muslim social formations.

For the computation of the trust scores from the data reported here, the two categories of 'a great deal of trust' and 'quite a lot of trust' were combined to arrive at a composite index of trust. The findings of the survey data are reported in Table 1. They show wide variations as well as similarities among respondents in the seven countries in terms of their trust in core institutions of religion and the state. Kazakhstan stands out as a country whose Muslims universally have very low confidence in key institutions of society. This is most likely a function of the dramatic changes that have occurred in Kazakhstan over the past decade. The impression gathered during the fieldwork in the late 1990s was that most people were disoriented by the economic and social changes that followed the collapse of the former Soviet Union. These changes reduced the total worth of Kazakhstan's GDP by half, thus adversely affecting the lives of ordinary citizens (UNDP 1996).

Many Kazakhs were disillusioned and very apprehensive about the future, and the data reflects this view. In relative terms, roughly three out of ten respondents trusted the armed forces, the press, television, universities, and intellectuals. However, the religious institutions of the *ulema*, *imam masjid*, and *pir* enjoyed much more trust than the key institutions of the state. This is rather surprising, given that most Kazakhs were not actively involved in religion during the Soviet era. Kazakhstan would need to be considered a special case. The other six countries can be compared with greater confidence.

Indonesia, Egypt, Turkey, Iran, and Pakistan, unlike Kazakhstan, are large, predominantly Muslim countries that have been ruled by the indigenous ruling classes for at least half a century. Malaysia is closer to Kazakhstan demographically in terms of size and composition. However, the Malays, unlike the Kazakhs, are well-known for their devotion to Islam. Key state institutions—namely, parliament, the courts, the civil service, and political parties—enjoyed moderate to low levels of trust in the public mind. Political parties were held in especially low public esteem in Pakistan, Kazakhstan, Iran, and Turkey. Levels of trust in state institutions were lowest in Kazakhstan and Iran, and highest in Malaysia. The armed forces were trusted by a considerable majority of the respondents in all countries except Iran and Kazakhstan. In Malaysia, Pakistan, and Egypt, the armed forces enjoyed comparatively higher levels of trust and were among the most trusted institutions in the public mind.

Table 1: Trust in Key Institutions in Selected Muslim Societies (In %)

Institution	Pakistan	Indonesia	Egypt	Kazakhstan	Iran	Turkey	Malaysia
<i>Ulema</i>	48	96	90	24	7*	28	95
<i>Imam masjid</i>	44	94	83	22	36	26	94
<i>Pir / kyai / ustaz</i>	21	91	52	21	8*	18	91
Political parties	12	35	28	12	10	3	44
Parliament	22	53	34	19	32	11	69
Courts	55	55	76	16	28	37	73
Civil service	26	58	44	11	23	22	61
Armed forces	82	68	78	33	29	68	85
Press	38	84	54	33	24	4	68
Television	31	80	49	37	30	9	72
Major companies	29	42	45	14	16	27	46
Schools	71	92	68	48	46	57	87
Universities	60	88	70	33	44	58	83
Intellectuals	66	92	81	37	59	67	91

* These percentages are from a subsample of 66 respondents.

The most striking differences between the countries, however, relate to trust in Islamic institutions. In Indonesia, Malaysia, and Egypt, the *ulema* and the *imam masjid* were the most trusted institutions of civil society. The institutions of *pir*, *kyai* and *ustaz* (religious experts) were very highly trusted in Malaysia and Indonesia, and moderately in Egypt. In Pakistan, Kazakhstan, Turkey, and Iran, the level of trust in religious institutions was low. The main survey in Iran ascertained only the level of trust in *imam masjid*, and it was found to be the lowest among the countries surveyed. In Iran, a smaller preliminary survey (number of respondents = 66) did include the questions about trust in *ulema* and *pir*, and the findings revealed a very low level of trust in these institutions. The preliminary survey surveyed mainly middle- and upper-middle-class respondents from Tehran. However, for proper comparison, only the data pertaining to *imam masjid* should be considered as comparable. The institutions of *pir*, *kyai* and *ustaz* were very highly trusted in Malaysia and Indonesia. In general, less than half of the respondents trusted religious institutions in Pakistan, Kazakhstan, Iran, and Turkey. In contrast, a large majority in the other three countries trusted these institutions.

Three other institutions that were trusted by a significant majority of the respondents in Indonesia, Malaysia, Egypt, Turkey, and Pakistan were intellectuals, universities, and schools. The level of trust in these three institutions was particularly high in Indonesia and Malaysia. Mass media institutions did well in winning public trust in Indonesia and Malaysia; moderately in Egypt, Pakistan, Kazakhstan, and Iran; but abysmally in Turkey. Perhaps the most surprising result reported in Table 1 is the low levels of trust in religious institutions in Iran and Pakistan. These are the only countries in the study that can be categorized as undifferentiated societies (i.e., Islamic states). These findings were counterintuitive. The patterns discerned in the differentiated societies were mixed. Indonesia, Malaysia, and Egypt displayed very high levels of trust, but that was not the case in Turkey and Kazakhstan. For reasons mentioned earlier, Kazakhstan can be regarded as a special case. This leaves Turkey as the only differentiated society with low public esteem in religious institutions. However, this does not mean that religious institutions there do not enjoy public trust and influence. The success of the Justice and Development Party in Turkey during the last election clearly suggests that they do. The evidence reported in Table 1 and the recent political developments in Turkey themselves allow us to come to a cautious conclusion that religious institutions enjoy a higher level of public trust and influence in differentiated Muslim social formations.

These findings are interesting because this is the first time such an empirical study has been carried out in seven Muslim communities in different regions of the world, and in different social formations. Intuitively, one would expect that, since Iran and Pakistan are the only undifferentiated (Islamic) states among the seven countries under study, the level of trust in religious institutions should be relatively high. The results are the *exact opposite*. It is also worth mentioning that one does not hear that religious institutions are held in such high esteem in Indonesia, Malaysia, and Egypt. In relative terms, even the trust shown in religious institutions in Kazakhstan as compared with state institutions was surprising. In view of the evidence reported above, we can say that the faith lines in contemporary Indonesian, Malaysian, and Egyptian societies are very clearly delineated. Based on the survey, state institutions were held in low to moderate esteem, and religious institutions were held in the highest esteem. In Iran and Pakistan, both state and religious institutions were held in low esteem, and a similar pattern prevailed in Kazakhstan. The pattern in Turkey was more complex. With the exception of the courts, institutions of the state were held in low public esteem. Religious institutions enjoyed more consistent levels of public trust. While the level reported in the study was relatively low, the victory scored by the Justice and Development Party during the last Turkish election would suggest that religion does enjoy a significant level of trust among the Turks.

Are these differences an artifact of the statistics or survey methodology? Indirect confirmation of the level of trust in religious institutions was provided by the findings of a 1996 Gallup Pakistan survey on Important Social Issues. A randomly selected sample of 821 urban respondents was asked how much they trusted the following institutions: the military, religious scholars, industries, the courts, newspapers, parliament, politicians, government officials, and the police. The results

were: the military 78%, religious scholars 44%, industries 38%, the courts 34%, newspapers 29%, parliament 21%, politicians 19%, government officials 17%, and the police 10% (Gallup Pakistan 1996). The results of the Gallup survey are remarkably similar to the results of the study presented here, and provide an external validation of the findings reported here as they relate to Pakistan.

Is Trust in Religious Institutions linked to Trust in Political Ones?

In this study, we were also able to examine the relationship between the level of trust in religious institutions and that in key institutions of the state. It was hypothesized that: the relationship between the level of trust in religious institutions and the level of trust in key institutions of the state would be stronger in an undifferentiated Muslim social formation than in a differentiated one.

In order to test this hypothesis, the average percentage of respondents expressing trust in each of the four institutions of the state (namely, parliament, political parties, the civil service, and the courts) was calculated separately for respondents expressing a lot of trust, not very much trust, or no trust in the three religious institutions (namely, *ulema*, *imam masjid*, and *pir / keyai / ustaz*). The category ‘a lot of trust’ includes the responses, ‘a great deal of trust’ and ‘quite a lot of trust,’ while the ‘not very much trust’ and ‘no trust’ categories represent those responses alone. The percentages refer to the proportion of respondents who indicated that they had ‘a great deal’ or ‘quite a lot’ of trust in institutions of the state. In Iran, the main survey did not include questions about trust in *ulema* and *pir*, so the level of trust in religious institutions is based solely on the data pertaining to trust in *imam masjid*. The findings of these calculations are reported in Table 2. These findings show that an increase in trust in religious institutions is associated with increased trust in institutions of the state in all countries. Another notable trend indicated by the data is that the average percentage of respondents who trusted religious and key state institutions was significantly lower in Kazakhstan and Turkey than in Egypt, Pakistan, Iran, and Indonesia.

Table 2: Level of Trust in Key Institutions of the State By level of trust in religious institutions (In %)

	A Lot of Trust	Some Trust	No Trust
Egypt	54	46	27
Indonesia	61	25	56
Pakistan	40	29	20
Kazakhstan	33	19	7
Iran*	47	14	9
Turkey	24	18	15
Malaysia	73	52	30

* For the Iranian sample, the term ‘religious institutions’ refers only to *imam masjid*.

Based on the examination of the evidence reported above, we can now conclude that: (1) the differences in the levels of trust in the surveyed countries were most likely produced by political and social dynamics, and not by cultural dynamics or methodological biases; and low levels of trust in religious institutions in society negatively affected the level of trust in state institutions.

Further attempts were made to ascertain the relationship between institutional configurations of the state and attitudes toward the role of religious institutions in society. To achieve this, all respondents in Turkey, Iran, and Malaysia were asked the following:

There is much debate these days about the appropriate role that religious institutions should play in a modern society. Please indicate which *one* of the following statements comes closest to expressing your opinion.

- A. Religious instructions should focus on religious affairs only.
- B. Religious institutions should be involved in political matters whenever it is necessary.
- C. Religious institutions should play an important role in the government.

The countries were selected on the basis of their contrasting or different institutional configurations. Turkey was selected because it is the most secular country; strict separation between religion and the state is enshrined in its constitution. Iran was selected because, under its constitution, it is an Islamic state, and the state is expressly required to govern the country according to Islamic law. This fusion of politics and religion is also enshrined in its constitution. Malaysia has different institutional configurations from Turkey and Iran. It is a constitutional monarchy and, although religion and state are theoretically separate, Islam is the official religion of the state. The role of Islam has been increasing gradually in political and public affairs. In some states (provinces) of Malaysia, Islamic party PAS wields significant political influence; in the state of Kelantan, it is the ruling party. It was also the ruling party in the state of Trengganu until it lost power few years ago.

The evidence reported in Table 3 shows striking differences in the attitudes of Turkish, Iranian, and Malaysian respondents. In strictly secular Turkey, 74% of respondents said religious institutions should focus on religious affairs. Only 11% favored religious institutions playing an important role in the government; another 14% favored an interventionist role for religious institutions when necessary. Respondents from the Islamic Republic of Iran saw the role of religious institutions differently. Unlike the Turkish Muslims, only 5% of Iranians were in favor of religious institutions confining their role to religious affairs only. Of those surveyed, 43% favored religion playing an important role in society; 52% favored involvement of religious institutions in politics whenever necessary. The outcome of the 2005 Iranian presidential election is consistent with this evidence.

Table 3: "What Is the Role of the Religious Institution?" Agreement by country, sex, age group, and education level (In %)

Demographic Variable	Iran			Malaysia			Turkey		
	A	B	C	A	B	C	A	B	C
All respondents	5	52	43	14	18	66	74	14	11
Gender									
Male	6	46	48	14	18	68	70	16	14
Female	5	59	37	14	19	67	80	13	8
Age									
Under 26	6	53	41	11	20	69	74	15	12
26-40	6	52	43	13	20	67	78	15	7
41-55	2	46	52	18	17	66	69	15	15
Over 56	8	58	33	24	18	59	74	5	21
Education									
Less than high school	7	58	36	18	17	65	70	14	16
High school	6	48	46	12	18	70	73	16	11
University or professional education	5	57	38	12	21	68	83	13	3

A = Religious institutions should focus on religious affairs only.

B = Religious institutions should be involved in political matters whenever it is necessary.

C = Religious institutions should play an important role in the government.

The results for Malaysia were different from those for Turkey and Iran. The pattern was almost the direct opposite of that seen in Turkey. Two-thirds of Malaysians were in favor of religion (i.e., Islam) playing an important role in government; the remaining respondents were divided roughly equally between the other two stated roles for religious institutions. These results clearly show that different institutional configurations have an impact on public attitudes. Most Muslim countries in the world are probably closer to the Malaysian state in their institutional configurations. And if Malaysian attitudes are an indicator of public attitudes, then we should expect vigorous support for a more interventionist role for religion in governmental affairs. A state that wishes to confine the role of Islam to religious affairs only might have to frame constitutions similar to Turkey's and have the political will to ensure that constitutional provisions about the role of religion are strictly enforced.

The analyses of survey data by gender, age, and educational level reveal some interesting patterns. In Iran and Turkey, men were more inclined than women to say that religious institutions should play an important role in government. In Turkey, women were more in favor of the role of religion being restricted to religious affairs. In Malaysia, there was no similar correlation between gender and attitudes toward the role of religion. Interestingly, in Malaysia and Iran, younger respondents were more inclined to favor an active role for religion in government whereas, in Turkey,

it was the older respondents who expressed this view. The more educated in Turkey were less likely to favor active involvement of religion in government, and they were also more likely to be in favor of confining the role of religious institutions to religious affairs. In Malaysia, education had little effect on attitudes; the majority of respondents across all education levels were in favor of religion playing an important role in government. Education levels did not markedly influence the attitude patterns of Iranian respondents, although the more educated and the least educated respondents were more likely to favor involvement of religion in political affairs when necessary, and those with high school education and some of those with college education favored an active role for religion in government. While gender, age, and education did produce some differences in attitudes, it is worth noting that the overall pattern did not alter significantly.

Discussion

What could be a possible explanation of these findings and what are their sociological implications? An explanatory hypothesis could be constructed in the following way. Given that, in all of the societies under study, there is a relatively low level of trust in key state institutions, we could hypothesize that a dialectical process is created by the social and political conditions within which key state institutions enjoy only low levels of esteem—and consequently political legitimacy—among citizens.

The main business of the state is to govern and manage the affairs of society in a fair and unbiased manner. When the state or its key institutions lack social/political legitimacy in the public mind, the state must use varying degrees of coercion to ensure compliance. Such an approach, the citizens will inevitably resist, which in turn produces a more authoritarian state response. This generates further resistance, and so a cycle of authoritarian response and resistance develops. The state ultimately comes to be seen as authoritarian, oppressive, and unfair, and this leads to political mobilization against the state. The institutions of civil society that act as the mobilizer of this resistance gain public trust, and consequently come to enjoy high levels of esteem and legitimacy among the public.

This model could explain the high level of trust in religious as well as other institutions of civil society—such as schools, universities, and public intellectuals—in Indonesia and Egypt. Since both these societies are examples of what we have called differentiated Muslim social formations, religious institutions play a vital public role in the mobilization of resistance to the state, thereby increasing the esteem with which they are held in the public mind. Universities, schools, and public intellectuals are also held in high esteem for the same reason. In Pakistan and Iran, however, the situation is different. Pakistan and Iran, as we have argued, are undifferentiated social formations in which religious institutions are integrated into the state structures. The erosion of trust in state institutions, therefore, also corrodes trust in religious institutions that are perceived as part of the state. Schools, intellectuals, and universities are probably trusted because of their role as mobilizers of resistance against a state perceived as weak, ineffectual, and authoritarian. The

low level of trust in religious institutions in Pakistan and Iran further reduces the trust in state institutions. In the case of Kazakhstan, the disintegration of the former Soviet Union has resulted in unparalleled political, social, and economic insecurity, and the low level of trust in all institutions is probably indicative of that insecurity, but again, the logic behind the model applied in the case of Indonesia, Egypt, Iran, and Pakistan can also be applied to Kazakhstan.

The high level of trust in the armed forces could be a function of the underlying dynamics of the proposed model. The state's lack of legitimacy might create or aggravate an underlying sense of insecurity among the people. It might be that this sense of insecurity produces a positive perception of the armed forces that helps compensate for the perceived sense of insecurity. In Pakistan, the very high level of trust in the armed forces could also stem from public perceptions of a military and political threat from India, which the Pakistan government promotes as a matter of public policy to justify its huge allocations of public revenues to the armed forces.

An alternative explanation of the findings can also be constructed by applying the late German sociologist Niklas Luhmann's typology of the role of religion in modern society. According to Luhmann (1977, 1982), institutional differentiation and functional specialization form a distinctive feature of modern society. They give rise to autonomous 'functional instrumentalities' such as polity, law, economy, science, education, health, art, family, and religion. One consequence of the increased institutional autonomy in modern societies is that major institutions become independent of religious norms and values, a process that Luhmann calls 'secularization.' In such conditions, the degree of public influence that religion enjoys depends on how it relates to other social systems in society. Luhmann uses the terms 'function' and 'performance' to analyze this relationship.

'Function' in this context refers to 'pure' religious communication, variously called devotion and worship, the care of souls, the search for salvation, and enlightenment. 'Function' is the pure, social communication involving the transcendent and the aspect that religious institutions claim for themselves on the basis of their autonomy in modern society. Religious 'performance,' in contrast, occurs when religion is 'applied' to problems generated in other institutional systems but not solved there or simply not addressed anywhere else, such as economic poverty, corruption, political oppression, etc. Religious institutions gain public influence through the 'performance' role by addressing these non-religious or 'profane' problems. The functional problem of religion in modern society is a performance problem.

Religious institutions gain public influence when they efficiently carry out their performance role. This requires religious institutions to be autonomous vis-à-vis the state and other institutional subsystems. A logical deduction from this premise is that religious institutions will gain greater public influence in institutional configurations in which they are autonomous from the state. If they are not, then they cannot carry out their performance function effectively. This model is articulated in Table 4. In the context of the study presented here, this means that

religious institutions will enjoy, at least theoretically, greater public influence in a differentiated social formation than in an undifferentiated state social formation. The findings of this study would appear to support Luhmann’s analysis.

Table 4: Differentiated vs. Undifferentiated Social Formations by functional vs. performance roles

Role of Religion	Undifferentiated Social Formation	Differentiated Social Formation
Functional role	High	Low
Performance role	Low	High

Viewed from these perspectives, the findings might have important implications for the institutional configuration of the state in Muslim countries. An Islamic state that lacks trust—and consequently political legitimacy—in the public mind might in fact cause an erosion of trust in Islamic institutions, thereby further weakening the fabric of civil society. For the religious elite in Muslim countries, the message conveyed by these findings is that an Islamic state might not always be in the best interests of Islamic institutions and the religious elite. To promote a constructive socio-cultural, moral, and religious role for religious institutions within a Muslim society, it might be prudent to keep faith lines separate from the state, and thereby prevent them from becoming the fault lines of the political terrain.

These findings also have implications for the ruling elite, particularly in differentiated Muslim societies. As we have noted, the findings show a feedback effect. The level of trust in religious institutions is directly related to the level of trust in institutions of the state (see Table 2). This means that attempts to disestablish Islam could have adverse consequences for the level of trust in the state and for the legitimacy of the state itself. The implication for the international community is that if an Islamic state (i.e., an undifferentiated Muslim social formation) were to come into existence through democratic and constitutional means, support for such a state could in the long run pave the way for the development of a kind of differentiated Muslim social formation.

As in the case of Pakistan and Iran, the Islamic elite might need to make some compromises with the state over time to ensure a stronger socio-cultural, moral, and political role for religion in the society at large. We could call this a type of ‘secularization’ of religion that manifests itself in calls to limit the political role of religion.

In summary, the findings reported in this paper show that the integration of religion and the state in Muslim countries might not always be in the best interests of Islamic institutions and the religious elite, because when a state fails to inspire trust in its citizens, public trust in religious institutions is also eroded. This could have serious social, cultural, political, and religious implications. For example, if the public lacks trust in the institutions of the *ulema* and *imam masjid*, this could significantly undermine the economic and social well-being of these institutions, and lead them

to create circumstances or support demands that might not be conducive to the profession and promotion of the universality. (Here one can speculate about the influence of the *madrassa* (religious schools) in Pakistan on the rise of the Taliban political and religious movement in neighboring Afghanistan. If this hypothesis is accurate, one inference seems to be that religious institutions within a Muslim society continue to play a constructive social, cultural, and religious role when religion is kept separate from the state, and when these institutions enjoy an appropriate place in the institutional configurations of the society. It might be prudent, therefore, to keep faith separate from the state.

Because of the feedback effect related to the level of trust in religious institutions that has been noted earlier, the findings of this paper might also have implications for the relationship between the state and religion in Muslim countries. As the level of trust in religious institutions is related directly to the level of trust in institutions of the state, it follows that attempts to destabilize Islam might have adverse consequences for the level of trust in the state and for the legitimacy of the state itself. It has also been argued that the undifferentiated Muslim social formation tends to evolve over time toward a kind of differentiated Muslim social formation. An Islamic state, therefore, might also provide a route to the social and political development of Muslim societies in which religion and state coexist in an autonomous but mutually cooperative relationship.

There is, of course, the logical possibility of a Muslim society that is characterized by high levels of trust in and esteem for the state, and in which there is also a high level of trust in religious institutions. However, as far as we know, there are no contemporary examples of such a situation that can be readily identified. This raises the interesting question of why this is so. Does it mean that such a situation is not possible, or could such a situation possibly come about under circumstances in which different political arrangements prevail between Islam and the state? I hope that this question as well as the findings reported in this article will stimulate further debate and discussion on the relationship between the state and religious institutions in Muslim countries.

References

- Abou El Fadl, Khaled, editor. 2004. *Islam and the Challenge of Democracy*. Princeton, NJ: Princeton University Press.
- Ayubi, Nazih. N. 1991. *Political Islam: Religion and Politics in the Arab World*. London: Routledge.
- Beinin, Joel, and Joe Stork, editors. 1997. *Political Islam*. Berkeley, CA: University of California Press.
- Beyer, Peter F. 1994. *Religion and Globalization*. London: Sage Publications.
- Crone, P. 1980. *Slaves on Horses: The Evolution of the Islamic Polity*. Cambridge: Cambridge University Press.

- Dhofier, Z. 1980. *The Pesantran Tradition: A Study of the Role of the Kyai in the Maintenance of the Traditional Ideology of Islam in Java*. PhD Dissertation. Canberra: Australian National University.
- Esposito, John. L. 1982. *Women in Muslim Family Law*. Syracuse, NY: Syracuse University Press.
- Gallup Pakistan 1996. *Pakistan Public Opinion on Important Social Issues*. Islamabad: Pakistan Institute of Public Opinion
- Gellner, Ernest 1968a. 'A Pendulum Swing Theory of Islam.' in *Sociology of Religion*. Roland Roberston (ed). Hammondsworth: Penguin.
- Gellner, Ernest 1981. *Muslim Society*. Cambridge: Cambridge University Press.
- Hassan, Riaz 2002. 'On Being Religious: A Study of Christian and Muslim Piety.' *Australian Religious Studies Review* 15(1).
- Hassan, Riaz 2002. *Faithlines: Muslim conceptions of Islam and society*. Karachi: Oxford University Press.
- Hassan, Riaz. 1987. 'Pirs and Politics: Religious Society and State in Pakistan.' *Asian Survey* 26:5.
- Huntington, Samuel 1993a. 'The Clash of Civilizations' *Foreign Affairs* 72:3.
- Huntington, Samuel. 1993b. *The Clash of Civilizations and the Remaking of World Order*. New York: Simon and Schuster.
- Keddie, Nikki 1994. 'The Revolt of Islam, 1700 to 1993: Comparative Considerations and Relations to Imperialism.' *Comparative Studies in Society and History* 36(3): 463-487.
- Lapidus, Ira M. 1996. 'State and Religion in Islamic Societies.' *Past and Present* 151 (May): 3-27.
- Lewis, Bernard 1993. *Islam and the West*. New York: Oxford University Press.
- Luhmann, Niklas 1977. *Funktion der Religion*. Frankfurt: Suhrkamp.
- Luhmann, Niklas 1982. *The Differentiation of Society*, trans. Stephen Holmes and Charles Larmore. New York: Columbia University Press.
- Marty, Martin E. and R. Scott Appleby, editors 1993. *Fundamentalisms and Society*. Chicago: University of Chicago Press
- Maududi, Sayyid Abul A'la 1960. *The Islamic Law and Constitution*. Lahore: Islamic Publications.
- Mayer, A. C. 1967. 'Pir and Murshid: An Aspect of Religious Leadership in West Pakistan.' *Middle Eastern Studies* 3(2): 160-169.
- Norris, Pippa and Ronald Inglehart 2003. 'Islamic Culture and Democracy Testing the 'Clash of Civilization' Thesis.' *Comparative Sociology* 1:3-4.
- Rahman, Fazlur 1982. *Islam and Modernity*. Chicago: University of Chicago Press.
- Rashid, Ahmed 1998. 'Pakistan and the Taliban.' in *Fundamentalism Reborn? Afghanistan and the Taliban* William Maley (ed). Lahore: Vanguard Press.
- Sadowski, Y. 1997. 'The New Orientalism and the Democracy Debate.' In *Political Islam*. Joel Beinin and Joe Stork (eds). Berkeley: University of California Press.
- United Nations Development Programme (UNDP) 1996. *Human Development Report*. Almaty, Kazakhstan: UNDP

- Wahid, A. 1983. 'Reflections on the Need for a Concept of Man in Islam.'
Unpublished paper. Tokyo: United Nations University.
- Weber, Max 1978. *Economy and Society*. Guenther Roth and Claus Wittich (eds).
Berkeley: University of California Press.
- Zubaida, Sami. 1989. *Islam, the People and the State*. London: Routledge.

MUNIR GHAZANFAR

KALABAGH DAM AND THE WATER DEBATE IN PAKISTAN

Abstract

Kalabagh Dam (KBD) project holds a unique place in Pakistan's policy making history. It has generated significant heated debate and controversy for a very long time. Three out of the country's four provinces have refused to go along with this project. However, in spite of the heated debate facts on KBD are not transparent, and the case of smaller provinces has not been highlighted in mainstream media debates. This paper investigates key issues like how much Indus river water is available, the annual wastage of 35 MAF water and the negative consequences of interventions with nature. On the face of it, at present, water is available for storage and expanded irrigation but the question is whose water and at what expense? Will it remain available in future when India utilizes all that has been acceded to it under the Indus Basin Treaty of 1960? Second, all that is ours is not available on regular basis. The average availability includes the occasional superfloods. Unless we can store the superfloods the average availability is simply not there for, sometimes, years on end; but KBD cannot store the superfloods. It is not a carryover dam. Finally while more irrigation water will be made available to Sindh, it will come at the expense of what is already passing through it and required for flood irrigation and as essential environmental outflows.

Introduction

Amongst the many national level water issues the Kalabagh Dam (KBD) project has come up as the most significant and well known water issue in Pakistan. In fact, there has never been a more controversial construction issue since the shifting of the capital of India by Muhammad Shah Tughlaq in 1326. It is a paradox that in spite of the controversy surrounding KBD many basic facts remain obscure. This paper aims to bring some of these into the debate.

Sixty years after the creation of the country over fifty per cent of the people in Pakistan are still illiterate and have been kept so, ostensibly, to keep them out of the decision making process and an informed policy debate. No wonder on many important national issues there is hardly any debate and likewise on Kalabagh Dam issue the media continues to project a one sided viewpoint and panic the people into believing the sky is going to fall if KBD is not immediately constructed. Fear in this case has been used as an instrument to win over public opinion.

Conventionally there are three groups which aim to educate and inform the people on national issues. One is political parties, the other is media and the third,

intellectuals. About the political parties the less said the better. As for the media, we can write off television, which all over the world is controlled in one way or another. Of the print media, especially in the Urdu press accessed by 99 per cent readership, there is little tradition of research and debate necessary to develop a perspective for issues and create understanding and interest. Finally, as for the intellectuals, they have always been a rare breed in Pakistan. That is apparent from the diminutive contribution of the universities in the sphere of social science. Research on social issues has also been restricted and constrained by the fear of security agencies and the establishment (Zaidi 2004), whose predetermined conclusions are always declared as the supreme national interest, and to debate that in Pakistan has been considered subversion. More recently World Bank, ADB, and other donors have commissioned various Pakistani NGOs and consultants to collect facts on issues related to gender, education, health, human rights, devolution etc. Many of these commissioned reports are for limited circulation, some are published, a few are confidential. They are in the form of reports and not research articles.

Kalabagh Dam is the first issue, which has given rise to a major debate and a degree of research to support positions. The motive force for all this debate and research has been the political resistance and refusal of the smaller provinces to come on board. The provincial assemblies of the three smaller provinces have repeatedly passed unanimous resolutions against it (referenced in a section below), mammoth public meetings have been held to oppose it, and especially in Sindh there have been numerous sit-ins, teach-ins and strikes.

The Kalabagh Dam Issue: Federal government's point of view

However limited the number of people involved or whatever the quality of debate, the KBD issue remains the most debated of the water issues. To sum up the position of the federal government, four purposes will be served by the construction of the Kalabagh Dam:

1. Storage (6.1 MAF) of excess water now going down the Kotri Barrage
2. Canal irrigation of 2.4 million acres of new lands
3. Generation of 3600 MW of hydroelectric power
4. Flood control

The benefits are substantial. The quantity of water stored in the Tarbela and Mangla Dam reservoirs is gradually decreasing due to sedimentation. Another dam on Indus will not only replace the loss of storage but substantially increase the total quantity of stored water enabling additional and timely releases for irrigation purposes to increase food grain production.

The KBD will eventually generate 3600 MW of cheap hydro-electricity or 11,750 million kilowatt hours of electricity in an average year. While the reservoir will be located largely in NWFP, the power generation station will be situated in Punjab. As

such the royalties from hydropower generation will accrue to Punjab. The dam will also help reduce the effects of floods by storing peak flood flows.

Last but not least, the federal government points out that every year 35 MAF water is going waste into the sea, downstream of Kotri. The same water could be used to bring a vast amount of new land under cultivation to produce more food for the increasing needs of a growing population.

Finally, the federal government says, it is not just a question of expanding storage, we are, in fact, losing the existing storage due to siltation of previous reservoirs and we desperately need more dams just to replace the lost storage of existing dams.

But there is no medicine without side effects. However, the costs, we are told, are relatively small at the loss of 24500 acres of land, including only 2900 acres of irrigated land to submersion, and displacement of 48500 persons (44000 in Punjab and only 4500 in the NWFP). Concerns of the provinces regarding water logging and salinity have been addressed in the dam design and allegations of ecological damage are simply not true. The opposition to the dam, therefore, it is alleged, is only political and malicious.

Are the Opponents of KBD Malicious?

The 6.1 MAF water stored at Kalabagh is planned to be distributed as follows: NWFP 1.1 MAF, Punjab 2.1 MAF, Sindh 2.1 MAF and Balochistan 0.7 MAF. A total of 2.4 million acres of additional land will be irrigated with the smaller provinces getting far more than their proportionate share of water. Likewise the 11750 million kWh (3600 MW) electricity generated will be fed into the national grid and used by all the provinces. Why on earth then are the smaller provinces against the construction of the dam when even the land to be lost to submergence (24500 acres) and the population to be displaced (48000) is located mostly in the Punjab. The dam is going to neither submerge any land in Sindh or Baluchistan nor displace any people. Yet all three smaller provinces are dead set against the construction of the KBD. No wonder the media has highlighted the opponents of KBD as irrational, politicized and malicious. Only one explanation has been put forth for this apparently irrational attitude of the smaller provinces i.e., the three smaller provinces do not want Punjab to receive the royalties from power generation and that the issue has been politicized and, therefore, not being decided on merit. It is indeed a very highly personalized explanation of their apparently odd behaviour, unsubstantiated by technical or economic argument. It is like looking at the problem from a villager's eye, a rural and feudal approach based on the concept of rivalry. Punjab is the only province siding with the Centre on the issue of the Kalabagh Dam. Most people in Punjab feel strongly self-righteous and even offended. They are concerned about delay not about debate.

It is obvious we do not know the full case of the smaller provinces. But before we explore the facts on KBD it is important to understand that KBD by and large is not an engineering issue. It is a political issue.

Is Kalabagh Dam Project a Technical Question?

The Punjabis often reflect the federal refrain that there is no dispute about the need and feasibility of Kalabagh Dam from the technical point of view but that some people in the smaller provinces have made it into a political issue.

Because we are uninitiated in debating social issues we do not realize that all technical issues at the national or international level are political issues and it is not necessary to be a part of the Kalabagh Dam technical feasibility team to have an opinion on Kalabagh Dam. Every person literate or illiterate has a right to have an opinion on political issues just as all spectators have the right to criticize the handling of a particular ball in cricket even when the critic himself/herself may not know how to even hold a bat. Kalabagh Dam Project affects the people, obviously, much more than cricket.

Kalabagh Dam, therefore, being a national issue is a political issue and all provinces, parties, and individuals have a right to an opinion on it even if they were only indirectly affected by it. The nation has a right to debate a gigantic national project like the Kalabagh Dam.

Water Availability in the Indus River System: The real bone of contention

When an upper riparian decides to build a storage-dam the first idea that crosses the mind of the lower riparian is that someone is planning to steal its water and where is the water for storage going to come from? Even when everyone is promised an enhanced supply, the water will have to be taken out of what is flowing to or through the lower riparian at the moment. It could be argued that the water passing through the lower riparian is by and large wasted. However, if the lower riparian, in this case Sindh, does not accept the argument, the water budget of the system would need to be scrutinized. It is this scrutiny of the water availability, which has caused one of the bitterest rancour between the provinces leading to charges of manipulation against WAPDA and the Federal Government. In all the meetings of the inter-provincial technical, economic, and political committees water availability is a bone of contention. It is, therefore, in the fitness of things to examine this question first.

For a proper debate facts should be known, but traditionally only a heated debate can bring out the facts. Ask anyone in government or the water field how much water is actually available. There is no single figure. The federal government and WAPDA may come up with a huge surplus in the system while Sindh contends there is an equally big deficit. What then is the total amount of water in the Indus

water system. Obviously there can be no single figure on that because the different figures represent different years. The quantum of water flowing in the Indus and its tributaries varies widely from year to year depending on snowfall in the Himalayan and Karakoram ranges and rainfall in the catchment areas as can be seen in Appendix I, which gives the annual western rivers inflows at the rim (River Inflow Monitoring) stations from 1922-23 to 2002-03. Flows of western rivers are highly erratic with a maximum of about 186 MAF to a minimum of 97 MAF. There is also seasonal variation with 84% in Kharif (summer) (GoP 2005a). In 1987 and again in 1990 and 1992 WAPDA had informed us that 137.27 MAF was the total surface water available in Pakistan. The figure was the mean of 64 years flows (1922-23 to 1986-87) of 3 western rivers Indus (Sindh), Jhelum and Chenab, because the government of Pakistan had signed off the eastern rivers, Ravi, Sutlej and Beas under the World Bank arranged Indus Water Treaty with India in 1960. The average was calculated on the basis of flows measured at the rim stations set up on the 3 rivers at Tarbela, Mangla and Head Marala (near Sialkot) respectively.

Here, before we proceed further some explanation of the measure of water is required:

What is 1MAF? One Million Acre Feet is the quantity equal to one foot deep water standing over one million acre area. One MAF is equal to 1.3 billion cubic meters. One cusec is water flowing at the rate of one cubic foot (28.3 litres) per second. One cusec of water flowing continuously for 24 hours equals 1.98 Acre Feet of standing water.

In 1994 the rim station inflow was raised to 143.1 MAF in WAPDA calculations. Now WAPDA uses a general figure of 145 MAF for the total surface water availability in Pakistan, which needs to be looked into further if we want to know why there is such a bitter issue between Punjab and smaller provinces on the net availability figures of water for further storages. For this, some analysis of the method of calculation is called for, and follows in the next section.

Water Availability Statistics: An Analysis

Here it needs to be remembered that figures and statistics while they are meant to be exact can be most deceptive. This character of statistics was well captured by the British Prime Minister Disraeli in his famous saying, "Lies, damn lies, and statistics."

It is therefore necessary to analyse deeper. A study of the calculations on which Table 1 is based is quite revealing:

Table 1: WAPDA's calculations of water availability from western rivers on pre-Accord* and post-Accord conditions (figures in MAF)

Sr. No.	Description	Pre Accord (1987)		Post Accord	
		Mean Year	4 Out of 5 years	Mean Year	
				1992	1994
1.	Western River Rim Station Inflows	137.27	123.59	137.91	143.1
2.	Eastern River Contribution	2.00	1.50	1.30	4.0
3.	Uses above Rim Station	5.50	5.50	5.70	5.3
4.	Losses and Gains (inclusive of flows) below Rim Station	10.00	8.00	10.00	10.0
5.	Outflow to sea	5.00	3.00	10.00	5.8
6.	Net Available for utilization (1+2+3-4-5)	129.77	119.59	124.91	136.1
7.	Canal Withdrawals/ Accord Allocations	106.79	103.44	117.35	117.4
8.	Balance Available (6-7)	21.98	16.15	7.56	18.7
9.	Authorized uses by India out of Western Rivers	2.00	2.00	2.00	2.0
Net Available (8-9)		19.98	14.15	5.56	16.7

* Accord 1991 refers to the water apportionment agreement reached between the four provinces and ratified by the council of common interests (CCI) on March 21, 1991

- *Changing averages.* Table 1 shows three markedly different figures for the western rivers inflow at rim stations. WAPDA uses the maximum availability figure. Calculating averages is a methodological issue and is highly contentious. It has been discussed below under the subtitle 'the issue of averages'.
- *Eastern rivers flows.* WAPDA has also added the eastern rivers flow of 4.00 MAF (see Table 2) to availability. In 1987 WAPDA put the eastern river flow at 2 MAF but in 1994 it suddenly raised it to 4.00 MAF and showing it as "flow generated within Pakistan". Again this issue has been discussed at length in another section below.
- *Indian claims on western rivers.* WAPDA has given a small figure of 2.0 MAF for the future Indian claim on the western rivers, which in fact, could be as high as 4.8 MAF. The Indian claim on the Western rivers is discussed in a section on the future Indian claims that, follows below.

- *Ungauged civil canals.* Table 1 shows some 5.5 MAF water is actually being used in ungauged civil canals in the NWFP province, shown as use above rim stations before being measured at the rim stations. WAPDA has started to use a figure of 3.00 MAF under the same title. This too has been discussed below.
- *System losses.* Construction of every high dam increases the system losses (see Appendix II). According to Abbasi and Kazi (2000) post Tarbela losses have already reached 14.7 MAF and that construction of KBD will increase the system loss by at least another 4.00 MAF, and thus total 18.7 MAF instead of the 10 MAF shown in the Table 1. Sindhis allege WAPDA has been playing down the system losses as listed in Table 1. Zaigham Habib (2008, pers.com) considers KBD addition to system losses would be about 1 MAF.
- *Contradictory availability figures.* As can be seen from Table 1, WAPDA has been arbitrarily altering its figures and post Accord calculations, showing the net availability anything from 5.56 (1992 calculation) to 16.7 MAF (1994 calculation, Table 1) by increasing the inflow figures and decreasing the required outflow figures when canal withdrawal had been fixed at 117.4 MAF.

Sindh's viewpoint on this issue has been projected by Abbasi & Kazi (2000) who have worked out alternative water availability figures from WAPDA's own published data and give a post 1991 Accord water availability figure of minus 5.2 MAF for the average year and minus 15.3 MAF for 4 out of 5 year scenario. See Table 2.

- *Environmental outflows.* A major issue at all water availability discussions is the essentially required environmental outflows to sea. WAPDA has been using different figures at different times varying between 3 to 10 MAF (Table 1 at # 5). The issue of required outflows has been discussed at length below.

Table 2: Comparison of Actual Post Water Accord Availability with WAPDA Computations of 1994 (Figures in MAF)

Sr. No.	Description	WAPDA's Computations	Abbasi & Kazi (2000) from WAPDA's Published Data	
		Mean Year 1994 Post Accord	Mean Year	4 out of 5 years (80% probability)
1.	Western Rivers Rim Station in Flows	143.1 (1976-94)	138.7 (1922-94)	125.3 (1922-94)
2.	Eastern River Contribution	4.0	-	-
3.	Uses above Rim Station	5.3	3.0	3.0
4.	Loss and Gains inclusive of inflows below rim station (post Tarbela 1977-1994)	10.0	14.7	11.8
5.	Outflows to Sea	5.8	10.0	10.0
6.	Net available for Utilization(1+2+3-4-5)	136.6	117.0	106.5
7.	Water Accord Allocation	117.4	117.4	117.4
8.	Authorized uses by India on Western Rivers	2.0	4.8	4.8
	Net Available	+17.2	-5.2	-15.3

Source: Website article by ANG Abbasi, Chairman of the Technical Committee on Water Resources (TCWR) and Federal Minister of State, under President Pervaiz Musharaf, and AM Kazi, former Senator and Minister of irrigation, government of Sindh.

Background to the Figures

Below now we discuss the background reality for the figures in some of the categories (including eastern rivers' contribution, future Indian claims on western rivers, use by ungauged civil canals above rim stations, and the outflow to sea) shown in the two water availability tables (1&2) given above:

The issue of averages

A perusal of Appendix I, which gives the western rivers rim stations inflow from 1922-23 to 2002-03 shows that while the flows in the western rivers vary from year to year, from time to time there is a super flood. In 1987 WAPDA made computations for the Committee on Water Resources and Management of the

National Commission on Agriculture for the 64 year period starting from 1922-23. WAPDA's computation depicted two scenarios one representing the average availability and the other representing 4 out of 5 year availability or 80 per cent probability (see Table 1). The difference between the two scenarios was explained as follows:

“In considering the potentially available surface supply it has to be kept in view that the flows are quite variable from year to year and until there is storage capacity large enough to absorb the above flows for carry over into subsequent years, the development would have to be based on the levels of flows which can be relied upon at least 4 years out of 5. This would apply not only to the direct use of flows but also to the creation of additional surface storages.”

The same criteria of 4 out of 5 years (80 percent probability) was reconfirmed in a 1990 report prepared under Farooq Ahmed Khan Laghari, the then federal minister of water and power and later the President of Pakistan. These two figures 137.27 and 123.59 MAF are the real bone of contention between Sindh and Punjab on the issue of KBD. In fact the federal government now gives a figure of average annual water availability at 145 MAF (GoP 2005:3) while the Sindhis stick to the 4 out of 5 years (80 percent probability) figure of 123.27 MAF, given by WAPDA in 1987 and 1990 but now sidelined and not quoted. Is the 145 MAF average availability figure given by WAPDA wrong? No, it is not wrong but neither is the 123.59 MAF figure projected by Sindhis.

We need to constantly remind ourselves that the average annual availability of water is actually much less than what WAPDA would make us believe if we take out what India can legally claim in future and if we consider what is available for 4 out of 5 years and not depend upon the once in a while super-flood that makes up the average but is not a continuous yearly availability. In the words of a US Supreme Court ruling in Wyoming versus Colorado (1922), “To be available in practical sense, the supply must be fairly continuous and dependable Crops cannot be grown on expectations of average flows which do not come, nor on recollections of unusual flows which have passed down the stream in prior years.” The general average is therefore a meaningless figure in this case.

Second, it is interesting to note that in Table 1 the average annual availability has been raised from 137.27 (1987) and 137.91 (1992) to 143.1 MAF in 1994. This was done by changing the basis of average calculation from a 64 years period (1922-23 to 1986-87) to a shorter and more hydrous 18 year period (1976-1994) taking the average from 138.7 (1922-23 to 1993-94 average) to 143.1 MAF (1976-1994 average, Appendix I). Thus WAPDA shifted from the established and more reliable practice of using the available data for the entire period involved. It should have used the more dependable 72 years average of 138.7 MAF.

The issue of eastern rivers contribution to the water availability in Pakistan

Let us assume that on an average, some 145 MAF (144 MAF, Government of Pakistan, National Water Policy, 2004) water annually arrives in Pakistan. But before we plan for any new storage we should look at how much of it is already being used and how much will be available on a sustainable basis.

Since after the Indus Water Treaty, IWT (1960), Pakistan is entitled only to the water flows from the three western rivers, Indus, Jhelum and Chenab. The three eastern rivers, Ravi, Sutlej and Beas now belong only and entirely to India. However, some water does enter Pakistan through the eastern rivers. The first question is: can this water be counted towards water availability in Pakistan on a sustainable basis? Obviously according to IWT it belongs to India, which is legally entitled to it and will use it soon.

The second question is how much is this water? WAPDA adopted a figure of 2 MAF and 1.5 MAF as the eastern rivers contributions for the mean year and 4 out of 5 years respectively in its computation of 1987 (see Table 1). In the 1994 computation WAPDA raised the average annual eastern river contribution from 2 to 4 MAF and referred to it as the flow generated within Pakistan i.e. between Madhopur and Ferozpur headworks in India and Balloki and Sulemanki headworks in Pakistan. However, Water Related Data issued as part of the Accord Documents by WAPDA in 1994 tell a different story. Pages 3 and 4 of sheet III(1)b (WAPDA 1994) tell us the average annual flow data between 1976 and 1994 as received from India was 3.00 MAF for Sutlej below Ferozpur and 1.5 MAF for Ravi below Madhopur.

According to the IWT (1960) this 4.5 MAF addition to the water availability in Pakistan actually belongs to India which country will use it sooner or later. It is for the reader to decide whether this 4.5 MAF can be counted towards sustainable water availability in Pakistan?

In addition it has been pointed out, that a number of link canals join Ravi and Sutlej rivers upstream of rim stations at Balloki and Sulemanki and transfer water to these barrages from the western rivers.

Future Indian claim on western rivers

Not so commonly known is the provision in the IWT under which we have conceded to India some rights on the western rivers also. This right of India on western rivers is recognized by WAPDA by showing 2.0 MAF as authorized use by India in all three computations of 1987, 1992 and 1994 (see Table 1). However, according to the provisions of IWT India is entitled to develop a total of 1,343,477 acres of cropped area on the western rivers allocated to Pakistan (IWT 1960). Out of the above area India has already developed 785,799 acres and utilized 6.75 MAF.

It has been estimated that for the development of the remaining 557,678 acres, India will require 4.79 MAF more on pro-rotas basis (Abbasi and Kazi, 2000), they can use more water if they like as there is no such restriction on them about the quantity of water or the time period in which the area is developed. Therefore, for the future authorized use by India from the western rivers a figure of 4.79 MAF or at the minimum 4.0 MAF should be adopted instead of 2.0 MAF.

Discussing the World Bank expert's verdict on Baglihar Dam the federal government told the members of National Assembly that India could store 1.5 million acre feet (MAF) water in addition to 0.6 MAF storage India needs for Baglihar Dam under the Indus Water Treaty 1960.....While displaying the charts, the federal secretary said, "we cannot stop India to go for hydropower generation projects and we have information that it plans eight power projects at Chenab Rivers tributary namely Davi". The secretary disclosed that India can store water up to 0.5 MAF for each of its planned eight projects on Chenab. (Nation, February 22, 2007)

Use by ungauged civil canals

In NWFP some ungauged civil canals above the rim stations have been using river water historically. WAPDA counts this water towards total availability below the rim stations.

In the 1994 WAPDA calculation, the amount of water used by the ungauged civil canals above the rim stations is given as 5.3 MAF (Table 1). This is consequently added to the water availability. However, the Water Accord documents show the use above rim stations as only 3.00 MAF (WAPDA 1994, II(1)a sheet 1 of 3). So WAPDA figure had inflated the net availability by 2.3 MAF on this account. So the gross availability fig should be decreased by 2.3 MAF.

Thus total availability as well as net availability are only exaggerated figures which are constructed partly by statistical manipulation of averages or by reducing the necessary environment outflow or system loss figures and partly by addition of water that legally belongs to India and will be used by that country in future.

Where then is the excess water for expanding irrigation as claimed? That is the question that Sindh raises. The Sindhi people are apprehensive that future storage and expansion of irrigation will be made out of the minimum allocation for environmental or irrigation use in Sindh. It was in this context that a high level inter-provincial committee on implementation of mega-water reservoirs on January 19, 2007 failed to reach a consensus among stakeholders. Sindh had already informed the committee that surplus water would be available only for 11 out of 27 year (and for 24 out of 72 years as Kharif availability) and that too would be just enough to meet the existing provincial shares under the Water Accord and not for new dams (Dawn January 21, 2007; Nation, January 21, 2007).

The issue of 35 MAF outflow downstream of Kotri

Much has been made of the so-called huge average annual amount of 35 MAF river water flowing out to the sea below the Kotri Barrage in Sindh. Does it not show there is spare water in the system going waste into sea while peasants long for a drop of water upstream? It is this water that needs to be stored in the five proposed dams/reservoirs upstream. The issue of the annual wastage of 35 MAF water is the kingpin of the argument against the Sindh case. The real nature of the statistical figure of 35 MAF outflow is, however, highly erratic (See Appendix III).

Outflow averages are deceptive. A recent (2005) study of the Government of Pakistan, (Ministry of Water & Power and Federal Flood Commission) has to say the following about water escapages downstream of Kotri:

“The average annual discharge volume downstream of Kotri has decreased from 81 MAF in the pre-Kotri period to approx 35 MAF in the post-Tarbela period. The average annual discharge volume of the last ten years (1994-2004) was approx. 6.8 MAF. In the extremely dry period 2000-2004 only approx. 2 MAF per year have been released downstream of Kotri Barrage.”

“The water releases during Rabi season have declined very strongly after 1965. In 22 out of 39 years the discharge volume of the Rabi season was less than 1.0 MAF. In 7 years since 1965 almost no water was released during the Rabi season. Compared to the period pre-Kotri the average discharge volume of the Rabi season declined from 9.4 to 2.2 MAF. The discharge volume of the Kharif season have also declined very strongly from an average of 71.7 MAF in the pre-Kotri period to an average of 32.6 MAF in the post-Tarbela period.”

“The distribution of flow volumes over the year has changed compared to pre-Kotri period. Presently about 83 per cent of the annual discharge volume occurs in the months of July, August and September. In the pre-Kotri only 66 per cent of the annual flows occurred in these three months.” (GoP Study II, 2005:92)

At another place the same study (p.173) referring to comparison with still an earlier period says “Exploitation of water resources upstream and recent drought periods resulted in reduction of flow levels below Kotri Barrage from 170 MAF to 35 MAF per annum.”

Committed nature of the flow. Even this average outflow is not entirely uncommitted. For the most part it is already committed. For example, it includes 10 MAF as the essential environmental outflow committed under the 1991 interprovincial accord. It also includes what is already signed off as belonging to India under the 1960 Indus Basin Treaty and India plans to consume in future.

Environmental outflow to sea committed in the Accord 1991	10.00 MAF
Eastern rivers share belonging to India.	4.50 MAF
Estimate of future Indian claim on western rivers for non-reservoir irrigation	4.70 MAF
Unutilized part of the increased canal withdrawal (106→114 MAF) committed allocation under the 1991 Accord	8.00 MAF
Expected increases in system losses upon the construction of KBD	4.00 MAF

This totals 31.20 MAF. If and when all this is used only 3.8 MAF will be left to flow down the Kotri Barrage over and above the 10 MAF, agreed in the Accord 1991 as the essential environmental flow, even in the average year of 35 MAF.

Is the outflow a wastage? It needs to be remembered that a certain amount of outflow to sea is absolutely essential for the health of the delta and other environmental considerations including protection against pollution, erosion, inundation of the delta and, encroachment of groundwater salinity, saving whatever mangroves remain and the sustenance of fisheries and other aquatic life. The International Union for the Conservation of Nature (IUCN) put the minimum required outflow figure at 27 MAF in one of its studies but in the Waters Accord 1991 a minimum outflow figure of 10 MAF was agreed, though Sindhis are not very happy about this figure and consider it too low. Having agreed to a 10 MAF environmental outflow in 1991 the federal government has now started to suggest that the average annual environmental outflow need be no more than 3.6 MAF (GoP 2005). Even the World Bank, the main protagonist of major dams has to say the following in its 2005 report:

“There is no feasible intervention which would enable Pakistan to mobilize appreciably more water than that it now uses. Arguably, overall use for irrigation needs to decline so that there are adequate flows into the degrading delta”. The allocated figure of 10 MAF outflow should be looked at in this perspective.

Not only the outflow at Kotri has been reduced from 81.11 MAF in the pre-Kotri period to 62.52 in pre-Tarbela period (1955-56 to 1975-76) to 34.75 MAF in the post Tarbela period (1976-77 to 2003-04) (See Appendix IV) but also the duration of the flow has been reduced to less than 3 months between the end of June to the beginning of September and that also in high flood years.

And even if we wanted to store only the super-floods, KBD could not do that. All dams in Pakistan including the proposed KBD store water only after meeting the current irrigation requirements at any moment of time and they are not empty when the flood comes. Thus the extra water during high floods is spilled over into the sea. A carry-over dam like the proposed Katzarah Dam near Skardu is different. It can

store excess floodwater in it for use in subsequent years. KBD is not being proposed as a carry-over dam.

Finally, even if 35 MAF or 10 MAF passes down the Kotri Barrage, is it wastage? The federal government says yes, and we should use it for badly needed irrigation. According to Sindh on the other hand, water passing down the Kotri Barrage is the lifeline of the Indus Delta, and even of the annual flood plain, Kachho, of River Indus in Sindh. This water sustains the riverine forest and Kachho cultivation, recharges and helps maintain the quality of the ground water, dilutes the pollution in the river and is necessary for the aquatic life and vegetation in the region.

Siltation: Loss of existing storage capacity

Loss of existing storage capacity has been used as one of the main justifications for KBD as a new storage to replace the lost storage capacity.

It has been pointed out that Mangla, Chashma and Tarbela are rapidly silting up and we are close to losing nearly 30 per cent of the total built storage capacity. Constructing KBD is not only a question of making a new dam but also of replacing the lost capacity. The World Bank Report (2005) says under the sub-title, Sobering Fact 12, "Pakistan has to invest and invest soon, in costly and contentious new large dams....And there is an urgent need for storage just to replace the capacity that has (as predicted) been lost to sedimentation. Given the high silt loads from the young Himalayas, Pakistan's two large reservoirs are (as predicted at design) silting relatively rapidly." Abbasi and Kazi (2000) have analysed at length and consider the siltation claims as exaggerated. According to them:

"The life of Tarbela and Mangla reservoirs was envisaged to be 55 and 75 years in the original projects, which has been revised to 125 and 225 years respectively due to lower than estimated rates of siltation. The large-scale watershed management programmes undertaken should further reduce the rate of siltation."

The height of the Mangla Dam has been raised as per stipulated provision in design. That will add another 2.9 MAF of storage capacity. However, even without increase in its height Mangla could store an additional 2 to 3 MAF in its present shape. As for Tarbela its silt deposits can be flushed out though sluicing as recommended by the Chinese experts at one seventh the cost of KBD.

Again, WAPDA has exaggerated the extent of siltation. In 1988 it said the reservoirs indicated a siltation of 1.23 MAF and gave an annual rate of siltation of live storage at 0.081 MAF for all three reservoirs. That adds up to only 2.20 MAF by the year 2000 and not to the siltation figure of 2.91 MAF by 2000 as suggested by WAPDA in 1994 (Abbasi and Kazi 2000).

WAPDA tried to link the utilization of enhanced irrigation allocation (117.5 MAF) under Accord 1991 with the issue of siltation of present reservoir capacity in a

meeting of the Council of Common Interests held on September 16, 1991 but the same was not accepted. Consequently the enhanced irrigation allocation of 117.5 MAF (or 114.5 MAF without the civil canals' usage in NWFP) is not linked to the construction of KBD in the Accord 1991 documents.

Accounting for rainfall and underground water

The River Indus is the only source of water either for drinking or for irrigation, available to the people of Sindh. Unlike Punjab, which gets considerable rain in the monsoons. Punjab gets most of the 40 MAF equivalent annual rain (20-40 inches) on the irrigated part of Indus Basin, while Sindh is parched land getting 4-12 inches (100-300 mm) of rain per year.

Further, while Punjab has a large reservoir of sweet water under its soil from which over 350,000 tube wells draw as much as 40 MAF of water every year, the subsoil water of most of Sindh is as saline as the sea (Gadi, 2003). Deep groundwater in Sindh is invariably brackish. Fresh groundwater is limited to areas where the river has flowed in recent centuries for a very long period. It floats upon brackish water down below, which has the same ratio of sodium chloride and potassium chloride as in seawater.

Intervening Natural Ecosystems

There is a need to look at the context of the debate. If we look at the water issues in a historical context we can see three trends: the need for water increasing, the total available water decreasing, and the downstream flows declining as more and more water is used upstream with new storages and canals.

The absolute quantity of water decreased with the signing of the Indus Water Treaty (IWT) in 1960, under the aegis of the World Bank (WB). The IWT was followed by construction of new reservoirs, and link-canals to transfer water from the western rivers. A World Bank study of 1960s had recommended shifting agriculture towards high input-high field crop systems—making system as much crop demand based as possible (Liefertinck et al. 1968). Thus in 1960s High Yielding Variety (HYV) of seeds were introduced which needed more intensive external inputs including chemical fertilizer and later pesticides to protect the new seed varieties which were more vulnerable to disease and pest attacks than the traditional varieties. The 'green revolution' seed varieties also needed much more abundant (up to 3 times as much water for the new wheat seeds, Gadi 2003) and timely supply of water and were, thus, linked to the construction of new dams and canals.

Liefertinck et al. (1968) World Bank study also recommended full storage and use of Kharif (monsoon) surplus water in Indus by the year 2000. However, the gradual intensification of irrigation has led to the dual menace of water logging and salinity, which had already become alarming in the sixties. New loans were contracted from the World Bank to install heavy-duty tube-wells to tackle the new menace of water-

logging and salinity. The tube-wells lowered the water table in some area and washed down salts accumulated on surface. Soon, however, the tube-wells were adding more salts than they were washing down because the groundwater contains more salts than river water and the quality degrades further with intensive pumping. Although they helped in lowering the water table in some water logged area the big capacity Salinity Control and Reclamation Project (SCARP) tube wells carried 1500 ppm of total dissolved salts as against 150 to 250 ppm carried by canal water (Chaudhry et al. 2002).

With the failure of tube well solution the World Bank came up with still another mega engineering solution i.e., plans to build surface water drains to counter the rising water logging and salinity. The first phase built at huge expense, comprised the Left Bank Outfall Drain (LBOD) in Sindh. The consequences have to say the least, been disastrous, impeding natural drainage, increasing pollution, drying up water bodies, diminishing and killing fauna and causing social dislocation and misery. Even the World Bank has admitted it. The Right Bank Outfall Drain (RBOD) has yet to be completed.

Why does the irrigation system lead to water logging? Water logging is caused when more water is added to the soil than can be drained. Nearly sixty per cent of the water through the irrigation system is wasted on the way mainly through seepage and percolation through canals distributaries and water courses into the ground leading to water logging. Only 40 per cent reaches the fields but, in fact, only 30 per cent is actually needed by the crops. However, excess water is required because of the flood irrigation method used in uneven fields. The overall irrigation efficiency in irrigated areas is estimated to be hardly 30 per cent (GCISC 2005).

Uptil 1967, 150 years after its development, Indus and its large canal network operated without any reservoir and 70 per cent of cropped area, having scarcity by design (Habib, 2006). The first reservoir of the Basin, Mangla was built as a replacement works storing and transferring water from River Jhelum to Ravi and Sutlej. The second big reservoir, Tarbela, also contributed to the replacement works through two big link canals, transferring water to the eastern rivers given over to India.

There is a need to understand that damming the rivers and building irrigation systems is an intervention with nature. A dam generally has two main purposes, to store and divert water for irrigation and to generate hydropower. It should be understood that generation of power does not entail major intervention because such dams that only generate hydropower are run-of-the river type and need only a one time small storage without consuming any. This is not to say that all storing and diverting water to irrigation is bad. It is only to highlight that interventions in the ecosystem have consequences and that mega-engineering solutions are one-dimensional. It follows intervention should not be large, may be local rather than regional, and solutions to problems should be as natural as possible. The findings of the World Commission on Dams (WCD) were highly critical of these negative

dimensions of the mega-engineering solutions to agricultural problems. In the words of WCD (2000) report “These ecosystems yield products such as wildlife, fisheries and forest resources and are of aesthetic and cultural importance to many millions of people. Diverting water to dams alters the natural distribution and timing of stream flows. This in turn changes sediment and nutrient regimes... affects the natural productivity of floodplains and deltas”. For a decade or so after the WCD report the World Bank lowered its profile but is back exhorting the governments to build without itself taking high profile public positions. We should, therefore, be cautious when discussing the positive outcomes of mega-engineering projects as solutions to our agricultural problems. Their negative outcomes may be equally serious but not highlighted and marketed in the media as their positive outcomes are.

A matter of trust

The federal government has repeatedly suggested that it is ready to incorporate Sindh’s water concerns in the Constitution. Since the Sindhis have refused to buy that offer, clearly there is a breach of trust. But what has made the Sindhis lose their trust?

In Feb/March, 2006, the President appeared on the national television and announced that the government had decided to postpone the construction of Kalabagh Dam to 2016 and had decided to build the Diamer-Bhasha Dam instead first. Again Raja Pervaiz Ashraf, the Federal Minister for Water and Power addressing a crowded press conference in Lahore declared “the government has finally decided to shelve the controversial Kalabagh Dam Project forever owing to the tremendous objection of the different stake-holders”. He said that controversy over KBD had reached an alarming stage that was threatening the unity of the Federation (The Nation May 27, 2006). Work on Bhasha Dam would now be taken up with immediate effect. In Sindh there was a sigh of relief and a feeling that a major thorn of discord in the body politics of Pakistan had finally been removed.

In December 2006, KBD started to be mentioned in the official plans again. The Central Development Working Party (CDWP) took up the issue with President Pervaiz Musharraf in the chair. The spokesperson at the end of the meeting declared that the project had been dropped due to lack of consensus. This was duly reported in the newspapers. The day-after newspapers, however, carried a different story. The KBD was after all going to be built along with four other dams and would be completed before 2016 and that committees had been constituted to immediately start mobilizing funds from the private sector through the creation of a Special Purpose Vehicle (SPV). When the reporters asked how could such a decision have been taken without approval of the inter-provincial technical and political committees the spokesperson replied the cabinet were all powerful and their decision would be binding for all committees and bodies (Dawn Dec 1, 2006). What trust is then left under these circumstances?

Dams are not the only thing, canals like the Greater Thal Canal (GTC), which are even more important, have been constructed without the consent of the lower riparian. Then there are canals which when built were promised to be seasonal but have now been operating on perennial basis. The federal government says some canals will draw water only during flood season. The same was said about the Chashma Right Bank Canal, when it was planned to be constructed. Now it is being fed on perennial basis.

When the opponents of the dam agitated against the danger of flooding to Nowshera city in NWFP WAPDA claimed the height of the reservoir had been reduced by 10ft to 915 feet. It has, however, been pointed out (Khan 2006) that actually the height of the reservoir has not been reduced, what WAPDA meant was that it would not be filled beyond 915 ft.

Referring to the KBD Project Report of June 1988, it has also been pointed out by a former chairman of the IRSA (Indus River Systems Authority) that because of the mid-level sluicing design of the dam even the claimed hydro power generation capacity is highly exaggerated (Khan 2004).

A major argument for KBD rests on its ability to provide cheap electricity. At the public meeting in Swabi President Musharraf said the electricity produced through water was Rs one per unit while the electricity with thermal power was produced from Rs 5 to 7 a unit (the Nation January 15, 2006). This highly attractive rate should be contrasted with proposals to offer 11.5 cents per unit to private hydropower plants.

The federal government says its words and intentions must be trusted while it accuses the smaller provinces of malicious intention. The Sindhi claim that even the earlier 1991 Indus water-sharing Accord, which is a document guaranteed by the constitutional body, the Council of Common Interests, has been violated (Wikipedia 2008), and water distribution is not taking place as had been agreed. How can there be trust if the debate is stifled, figures are manipulated and opposition's viewpoint is considered traitorous? The federal government promises the displaced population of the dam and reservoir area will be adequately compensated and resettled. Who can trust that when many of the Tarbela displaced have neither yet been settled nor adequately compensated. The federal government does not care for the decisions of the Council for Common Interests and for the repeatedly passed unanimous resolutions of the provincial assemblies of Sindh, NWFP and Balochistan (Sindh:14 June, 1994, 28 Feb 2003, 19 June 2003; NWFP: 20 Dec 1988, 30 May 1991, 18 Nov 1993; Balochistan: 6 Oct 1996). How can there be trust? If there is malice let facts decide where it lies.

Conclusion

One, KBD is a political issue. The issue of KBD is not an issue of technical feasibility. All major technical issues of national or international level are political

issues and should be decided first and foremost on the basis of political feasibility. If and when there is a conflict between technical and political considerations, political considerations must prevail.

The water conflict between upper riparian, lower riparian is nothing special to Pakistan. It is common between provinces and between states. The resolution lies not in authoritative imposition but in consensus. Authoritative imposition by a majority province, a state, or an interest group can lead to long-term consequences and a crisis of legitimacy. No single province, not to speak of a single individual, has the right to determine the national interest. The adverse political fallout of such a policy will outweigh any presumed real or imagined technical or economic advantage. Time and again, we have been faced with conflicting perceptions on issues concerning smaller provinces, e.g., on the Urdu versus Bengali language issue in 1948, or the 1971 election related insurgency in East Pakistan as well as on the autonomy demands of smaller provinces in West Pakistan and now on the construction of Kalabagh Dam resolutely opposed by all three smaller provinces. The consequences have been erosion of trust at the minimum and dismemberment of the country at the worst.

Two, the shortage of water and shortage of power, too, in a sense are universal problems in all countries and, in another sense, have been exaggerated to build a case for the KBD and other storages. Acquiring unity through the creation of fear and panic is a standard technique in politics. It is now established that in United States and Britain, public backing for the invasion of Iraq was acquired by creating a totally false and fabricated fear and panic of the weapons of mass destruction and the threat of imminent attack from Iraq. In Pakistan, for example, fear of impending war or invasion have been commonly used to acquire national backing. In 1971 the secessionist image of Awami League was effectively used to subvert the transfer of power to a democratically elected majority party and thereby, actual dismemberment was promoted and ensured. Load shedding has likewise been used to acquire public backing for entering unequal treaties with Independent Power Producers (IPPs). Realistic decisions are not possible in a state of panic where people are given to believe famine and darkness are looming across the door. That is what Punjab has been given to believe on the issue of KBD.

Three, alternative options are available. These include conservation measures like the lining of canal and water courses, better irrigation practices, and better farming practices including a reversion to our age old tradition of organic farming based on indigenous by developed seeds requiring much less water. Through these means and others we can save far more water than can be stored in the Kalabagh Dam. However, building the dam or emphasizing conservation and ecology are two different paradigms. One is techno-centric, the other is socio-centric. Techno-centric solutions are promoted by lending agencies like the World Bank while socio-centric solutions require social capital, social mobilization, education and above all a policy of self-reliance. The benefits of socio-centric policies are widespread with extensive spillover externalities.

Four, a careful look at the water budget shows the water for KBD can be spared only by ignoring the ecology of the Sindh province. It is scientifically wrong to consider the water going down from Kotri into sea as wastage. It has an important role in sustenance of aquatic life, maintaining the essential equilibrium in the delta region governing mangrove forests, safeguarding the coast from cyclonic winds and erosion, diluting pollution, maintaining the quality of underground water, replenishing soils, watering riverine forests and agriculture, and sustaining people's livelihoods and habitat.

The reality and significance of the ecological and environmental argument should not be downplayed. Twenty eight per cent of arable land in Pakistan has already fallen prey to a variable degree of water logging and salinity, which is a direct result of canal irrigation. Effects of dams and canal irrigation are much more serious in Sindh where 50 per cent of land is affected by water logging and salinity, the underground water has degraded, the saline water front from the sea is encroaching and the fifth largest delta in the world is suffering from major desertification including vanishing mangrove forests and aquatic life and consequent loss of livelihoods and dislocation of human settlements. Add to this the apprehensions of NWFP again about water logging and salinity of choice lands in Mardan, Charsadda and Nowshera. The federal government says NWFP's fears have been addressed in the revised design but there is a deficit of trust because of the many about-turns, betrayals and misinformation.

The fact cannot be ignored that foreign banks, especially World Bank and the ADB, are interested in extending loans for the construction of KBD. The World Bank has a poor track record. It was under its auspices that we signed away three rivers to India in 1960, entered into a debt trap, lost sovereignty and spread poverty in the name of poverty alleviation. The World Bank's business is lending money for mega-projects. It is not neutral, it has a stake in the construction of the KBD. It is in this context that many of the WB and ADB funded seminars have to be looked at as "Marketing activities" leading to tens of billions of USD loans.

More important, World Bank has another programme on the anvil, it is water privatization. Numerous global water organizations like Global Water Partnership (GWP), Pakistan Water Partnership (PWP), IIMI, International Waterlogging and Salinity Research Institute (IWARSI), etc. have not only taken over water resource planning from WAPDA but are instrumental in restructuring WAPDA itself and planning the privatizing of its assets and organizational structures in bits and pieces. Irrigation water will be privatized in the form of reservoirs. KBD will also carry one such reservoir. Telemetry is being installed and trial privatisation runs have been attempted on smaller scale. Nearly all new hydropower stations like the Neelum-Jhelum Project are already being built on BOT basis by investors. Kalabagh Dam Project is not likely to be different. At the provincial level the NWFP's MMA government offered many attractive sites and incentives for investment in hydropower stations to international bidders at the guaranteed purchase price of 4.7 cents per unit. This was nearly the same price at which the thermal power stations were contracted in

mid-ninetees by the Benazir Bhutto government. That price offer, however, was contemptuously turned down by the intending private parties. Why shouldn't they when the federal government is now offering 11.5 cents per unit to the private parties at the proposed new hydel sites. Water as well as hydropower are in for privatization. This is something to consider when explanations are sought why KBD is being pushed so hard. The lenders have come a long way from the days of Mangla and Tarbela. Now they seek ownership profits not simple interest.

The historical and global perspective of major water related issues cannot be ignored today. Indus Basin is one of the major granaries of the world and its grain and raw material potential was realized by the British long time ago when in 1880 they started building weirs across the Indus River System and diverting water into canals simultaneously being built. The second assault on the Indus Basin took the form of Indus Basin Water Treaty (1960). The canal building and tube-well installation project was accompanied by the introduction of imported seeds which needed much greater input of water, artificial fertilizer and pesticides (Gadi 2003). These requirements were a major step towards integration of its production with the global markets and technologies. The third assault is in its initial stage and involves the construction of infeasible new reservoirs, the use of genetically modified (GM) seed, privatization of the water resource and corporatization of agriculture.

While doing social policy analysis it is important to remember there are two sides to every issue. Pointing the malaise, the wastage, the growing shortage and the inequitable distribution of water is the first part in selling a policy, and this people recognize as their own experience. The second part, the prescription, paints rosy promises of conservation, plenty and equitable distribution of water. It is the second part or the prescribed policy of mega-projects and privatization, which is more or less, sold blind because people cannot relate this future scenario to their past experience. It is this prescription that contains the bomb, but that will be discovered only after when the policy has been implemented and it is already too late. Neither the fallout from, nor the alternatives to the prescribed policy are properly discussed or debated beforehand. As individuals people have neither the resource nor the time to discuss their own or other countries historical experience and link it to what is being marketed, in the name of 'development', or 'supreme national interest'.

References

- Abbasi, A.N.G. and Kazi, A.M. 2000. 'Kalabagh Dam: Look Before You Leap'. <http://www.angelfire.com/az/Sindh/indus4.html> February 23. Also <http://www.sanalist.org/kalabagh/main.htm>
- Bengali, K., *editor*. 2003. 'Water Reforms: The World Bank's View' in *Politics of Managing Water*. Pakistan: SDPI-Oxford University Press.
- Chaudhry, M.R., M.N. Bhutta, M. Iqbal and K.M. Subhani 2002. Proceedings of the Second South Asia Water Forum: 67-81. Islamabad.
- Gadi, M. 2003. 'Re-colonizing the Indus Basin Irrigation System' in *Politics of Managing Water*. Kaiser Bengali (ed), Karachi: SDPI-Oxford University Press.

- GCISC 2005. *Water and new technologies*. Global Change Impact Study Centre. Islamabad. Reported Dawn August 29, 05.
- GoP 2004. Government of Pakistan. Private Power and Infrastructure Board (PPIB). Advertisement. Herald, Karachi. August.
- GoP 2005. *Kotri Barrage Study-II Consultant Group. Federal Flood Commission, Final Main Report*. Ministry of Water and Power. Lahore: Study by Lahmeyer International GmbH Germany and Indus Associated Consultants.
- GoP 2005a. Report of Technical Committee on Water Resources. Government of Pakistan, August 2005.
- Habib, Zaigham 2006. Water Management and Reservoirs in Pakistan. *South Asian Journal* 11. Lahore: Free Media Foundation.
- IWT 1960. *The Indus Water Treaty between the Government of India and the Government of Pakistan*. World Bank.
- Kazi, A. 2003. 'Kalabagh Dam: Varying Points of View' in *The Politics of Managing Water*. Kaiser Bengali (ed), Karachi: Oxford University Press.
- Khan, Asfandyar Wali. 2006. 'The Pakhtunkhwa's case against the proposed KBD project' *The Nation*. January 10, 2006. Lahore.
- Khan, Fateh Ullah 2004. 'Infeasibility of the Kalabagh Dam'. *Dawn Economic and Business Review* November 01-7:pIV
- Lieftinck, P. 1968. *Water and power resources of West Pakistan; A study in sector planning I, II, III*. World Bank. Baltimore: Johns Hopkins.
- Shiva, Vandana. 2002. *Water Wars*. Cambridge MA:South End Press.
- WAPDA 1994. *Indus River and Canal System Water Related Data*. Accord Documents and Studies. Lahore: Technical Committee on Integrated Water Resources Development Programme.
- WAPDA 2006. 'Important points from President General Pervez Musharraf's address on the foundation stone laying ceremony of Diamar – Bhasham Dam'. *Wapda Khabarnama* (Urdu). Vol. 30, Nos. 17-18, May 1 to 15, 2006.
- Waters Accord 1991. *Government of Pakistan Indus Waters Accord*.
- WB 1995. *Private Sector Participation and Infrastructure Development in Pakistan*. Background paper for Pakistan 2010 Report, July 1995 (unpublished). World Bank.
- WB 2005. *Pakistan – country water resources assistance strategy: Water economy running dry*. Washington: The World Bank.
- WCD 2000. Dams and Development: A new Framework for Decision-Making. The report of the World Commission on Dams. http://www.dams.org/report/wed_overview.htm
- Wikipedia 2008. http://en.wikipedia.org/wiki/kalabagh_dam
- Zaidi, S.A. 2004. 'Social Science Research in Pakistan.' *Daily Dawn*, August, 22, 2004.

WESTERN RIVERS RIM-STATION INFLOWS

Years	RIM-STATION INFLOWS																							
	INDUS AT KALAGAGH				JHELUM AT MANGLA				CHENAB AT MARALA				TOTAL											
	MAF	% of AVG	RABI	ANNUAL	MAF	% of AVG	RABI	ANNUAL	MAF	% of AVG	RABI	ANNUAL	MAF	% of AVG	RABI	ANNUAL	MAF	% of AVG						
1922-23	81.65	107.0	16.04	117.6	97.69	108.7	111.9	5.37	110.8	25.76	111.6	19.44	90.9	4.55	104.9	23.99	93.3	121.48	104.8	25.96	113.9	147.44	106.3	
1923-24	95.09	124.6	14.95	109.8	110.04	122.4	18.14	99.5	4.79	98.9	22.93	99.4	17.23	80.6	3.81	87.8	21.04	81.8	130.45	112.6	23.55	103.3	154.01	111.0
1924-25	69.62	91.3	13.08	96.1	82.70	92.0	22.71	124.6	3.75	77.4	26.46	114.7	17.23	80.6	3.30	76.1	20.53	79.8	109.56	94.5	20.13	88.3	129.69	93.5
1925-26	66.36	87.0	11.40	83.7	77.76	86.5	17.03	93.4	3.71	76.6	20.74	89.9	17.12	80.1	3.11	71.7	20.23	76.7	100.51	86.7	18.22	79.9	118.73	85.6
1926-27	61.15	80.2	11.71	86.0	72.86	81.0	19.03	104.4	3.36	69.3	22.39	97.0	18.98	88.8	3.06	71.0	22.06	85.8	99.16	85.6	18.15	79.6	117.31	84.6
1927-28	57.07	74.8	12.66	93.0	69.73	77.6	16.18	88.8	4.51	93.1	20.69	89.7	17.17	80.3	3.24	74.7	20.41	79.4	90.42	78.0	20.41	89.5	110.83	79.9
1928-29	68.37	89.6	12.75	93.7	81.12	90.2	21.80	119.6	5.42	111.9	27.22	118.0	18.05	84.4	3.92	90.4	21.97	85.4	108.22	93.4	22.09	96.9	130.31	94.0
1929-30	62.45	81.9	14.22	104.4	76.67	85.3	15.83	86.8	7.74	159.7	23.57	102.2	18.92	88.5	4.98	114.8	23.90	92.9	97.20	83.9	26.94	118.2	124.14	89.5
1930-31	74.09	97.1	12.32	90.5	85.41	96.1	21.16	116.1	4.42	91.2	25.58	110.9	21.88	102.4	2.99	68.9	24.87	96.7	117.13	101.1	19.73	86.5	135.85	98.7
1931-32	63.27	62.9	14.79	108.6	78.05	86.8	20.83	114.3	4.47	92.3	25.30	109.7	17.00	79.5	3.04	70.1	20.04	71.9	101.10	87.2	22.30	97.8	123.40	89.0
1932-33	71.08	93.2	10.97	80.6	82.05	91.3	17.83	97.8	3.51	72.4	21.34	92.5	18.71	87.5	3.16	72.9	21.67	85.0	107.62	92.9	17.64	77.4	125.25	90.3
1933-34	80.25	105.2	11.60	85.2	91.85	102.2	22.52	123.6	3.66	75.5	26.16	113.5	22.91	107.2	3.51	80.9	26.42	102.7	125.68	108.4	18.77	82.3	144.45	104.2
1934-35	74.45	97.6	11.61	85.3	86.07	95.7	14.36	78.8	3.65	75.5	18.02	78.1	19.37	90.6	3.40	78.4	22.77	88.5	108.19	93.4	18.67	81.9	126.85	91.5
1935-36	74.61	97.8	12.82	94.2	87.43	97.3	20.23	111.0	5.57	115.0	25.80	111.8	21.97	102.8	3.89	89.7	25.86	100.6	116.81	100.8	22.28	97.7	139.09	100.3
1936-37	82.49	108.1	13.20	97.0	95.69	106.4	19.90	109.2	4.41	91.0	24.31	105.4	22.52	103.3	3.30	76.1	25.82	100.4	124.91	107.8	20.91	91.7	145.82	105.1
1937-38	75.54	99.0	11.99	88.1	57.53	97.4	16.25	89.2	4.76	98.6	21.03	91.1	18.31	85.7	4.57	105.4	22.88	89.0	110.10	95.0	21.34	93.6	131.44	94.8
1938-39	81.81	107.2	13.85	101.7	95.66	106.4	18.65	102.3	4.95	102.2	23.60	102.3	24.90	116.5	3.79	87.4	28.69	111.6	125.36	108.2	22.59	99.1	147.95	106.7
1939-40	88.28	115.7	11.77	85.5	100.05	111.3	18.95	104.0	3.14	64.8	22.09	95.7	20.01	93.6	2.63	60.6	22.64	88.0	127.24	109.8	17.54	76.9	144.78	104.4
1940-41	74.66	97.9	10.25	75.3	84.91	94.4	13.50	74.1	3.04	62.7	15.54	71.7	16.36	76.5	2.29	52.8	18.65	72.5	104.52	90.2	15.58	68.3	120.10	86.6
1941-42	75.97	99.6	15.32	112.5	91.29	101.5	13.94	76.5	5.83	120.3	19.77	85.7	17.84	83.5	4.77	110.0	22.61	67.9	107.75	93.0	25.93	113.7	133.67	95.4
1942-43	99.78	130.8	12.84	94.3	112.62	125.3	19.98	109.6	3.65	116.6	25.63	111.1	23.81	111.4	5.02	115.7	22.83	112.1	143.57	123.9	23.51	103.1	167.05	120.5
1943-44	83.62	109.6	11.74	86.2	95.36	106.1	19.62	107.6	3.64	75.1	23.26	100.8	24.15	113.0	4.23	97.5	28.35	110.4	127.39	109.9	19.61	85.0	147.00	105.0
1944-45	80.01	104.9	12.32	90.5	92.33	102.7	15.42	84.6	4.01	82.8	19.43	84.2	20.63	96.5	3.77	85.9	24.40	96.1	116.06	100.1	20.10	85.2	135.16	98.2
1945-46	92.34	121.0	12.77	93.8	105.11	116.9	17.52	96.1	3.15	65.0	20.67	89.6	21.76	91.9	2.94	67.8	24.72	94.9	131.64	113.6	18.85	82.7	150.50	108.5
1946-47	78.92	103.5	11.34	83.3	90.26	100.4	11.81	64.8	3.54	73.1	15.35	65.5	19.71	92.2	3.54	81.6	23.25	90.4	110.44	95.3	18.42	80.5	128.85	92.9
1947-48	67.20	88.1	11.12	81.7	78.32	87.1	22.33	67.6	5.49	113.3	17.82	77.2	21.83	102.1	6.70	154.5	28.53	110.9	101.35	87.5	23.3	103.2	124.67	89.9
1948-49	82.07	107.6	13.03	95.7	95.10	105.8	22.58	123.9	5.22	107.7	27.80	120.5	27.50	128.6	5.32	122.7	32.82	127.5	132.15	114.0	23.57	103.4	155.72	112.3
1949-50	90.73	118.9	13.37	98.2	104.10	115.8	19.70	108.1	5.04	104.0	24.74	107.2	21.85	102.3	5.30	122.2	27.16	105.6	132.29	114.2	23.77	104.0	156.00	112.5
1950-51	95.31	124.9	11.03	81.0	106.34	118.3	25.27	138.6	4.92	101.5	30.19	130.5	39.70	143.6	4.43	102.1	35.13	136.5	151.28	130.5	20.38	89.4	171.65	123.5

WESTERN RIVERS RIM-STATION INFLOWS

Years	RIM-STATION INFLOWS																							
	INDUS AT KALAGAGH				JHELUM AT MANGLA				CHENAB AT MARALA				TOTAL											
	KHARIF	RABI	ANNUAL	% of	KHARIF	RABI	ANNUAL	% of	KHARIF	RABI	ANNUAL	% of	MAF	ANNUAL	% of									
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
1951-52	59.57	78.5	12.06?	88.6	71.93	80.0	16.37	89.8?	4.20	86.7	20.57	89.2	17.36	81.3?	3.95	91.4?	21.31	82.9	93.65	80.8?	20.21?	86.7?	113.81?	82.1?
1952-53	74.86	98.1	11.59	85.1	86.45	96.2	16.31	89.5	3.25	67.3	19.57	84.8	21.16	99.0	3.12	71.9	24.28	94.4?	112.33	96.9	17.97?	76.8?	130.30?	94.0?
1953-54	79.51?	104.4	13.95	102.5	93.57	104.1?	15.29	83.9	7.39	152.5	22.68	98.3?	21.41?	100.2	5.42	125.0	26.83	104.3?	116.31	100.4?	26.77?	117.4	143.08?	103.2?
1954-55	78.79	103.3	12.02	88.3	90.81	101.0	19.28?	105.8	4.42	91.2	23.70	102.7?	21.90	102.5	3.83	85.3	25.74	100.4?	119.98?	103.5	26.27?	88.9?	140.25?	101.1?
1955-56	70.69	92.7	13.58	99.7	84.27	93.7	14.92	81.9	4.40	90.8	19.32	83.7	21.90	102.4?	7.04	162.3	28.94	112.5	107.51	92.8?	25.02?	109.5	132.53	95.6
1956-57	85.10	111.6	13.69	100.6	98.79	109.9	19.26	105.8	5.74	118.5	25.02	108.4?	27.34	128.8	6.03	139.0	33.57	130.3	131.92	113.8	25.45?	117.7	157.36?	113.5
1957-58	71.04	93.1	16.83?	108.9	85.87	95.5	25.07	137.5	7.67	158.3	32.74	141.9	26.89	125.8?	5.60	129.4?	32.49	125.5	123.00	106.4?	28.10?	123.3	151.10	108.9
1958-59	81.92	107.4	17.55	128.9	99.47	110.6	19.25	105.6	6.15	168.2	27.40?	118.5	23.30	109.0	8.39	193.4?	31.69?	123.2	124.47?	107.4?	34.09?	149.5	155.65?	114.3
1959-60	99.84	130.9	20.25	148.7	120.09	133.6	25.60	140.4	6.05	124.9	31.65	137.2	29.30	137.4?	5.75	132.4	35.05	136.3	154.74	133.5	32.07?	140.6	186.79?	134.7
1960-61	90.99	119.3	13.52	99.3	104.51	116.2	13.00	71.3	3.26	67.3	15.26?	70.5	20.95	98.4?	3.95	91.3	24.94	97.0?	124.97	107.5	20.3	91.0	145.7?	105.4?
1961-62	80.79	105.9	13.08?	95.9	93.85	104.4?	14.24	78.1	3.55	73.3	17.79	77.4?	24.55	114.5?	4.32	99.5?	28.87	112.3	119.58?	103.2?	20.3	91.5	140.51?	101.3?
1962-63	60.23	79.0	11.10	81.5	71.33	79.3	11.91	65.3	4.26	87.9	16.17	70.4?	17.82	83.4	4.49	103.5	22.31	85.5?	89.96	77.6?	19.85?	87.1	109.81?	79.3?
1963-64	76.41	100.2	12.95	95.1	89.36	99.4	17.63	96.7	4.38	90.4	22.01	95.4?	19.35	90.6?	4.33	98.8	23.69	92.1	113.40	97.9	21.65	95.0	135.05	97.4?
1964-65	75.15	98.5	13.58	99.7	88.73	98.7	19.30	105.9	4.30	88.7	23.60	102.3	21.65?	101.3	4.44	102.4	26.10	101.5	116.11?	100.2	22.32	97.9	135.43	99.8?
1965-66	76.83	100.7	12.91	94.8	89.74	99.8?	22.37	122.7	4.23	67.3	26.60	115.3	15.69	87.4	3.95	91.4?	22.64	88.0	117.83	101.7	21.07?	92.5	135.95	100.2
1966-67	77.54	101.6	13.93	102.3	91.47	101.7	17.58	96.4	5.52	113.9	23.10	100.4?	21.52	100.7	4.38	101.0	25.90	100.7	116.64	100.6	23.83	104.5	140.47	101.3
1967-68	81.92	107.4	15.05?	110.6	95.95?	107.9	16.41	101.0	5.49	113.3	23.90	103.5?	20.10	94.0	5.21	120.4?	25.31	98.4?	120.43	103.9	25.76?	113.0	146.19	105.4?
1968-69	78.83	103.3	14.40	106.2	93.29	103.8	16.40	90.0	5.24	108.1?	21.64	93.8?	20.40	95.4?	3.51	80.9	23.91	95.0	115.63	99.8?	23.21	101.5	138.82?	100.1?
1969-70	74.47	97.6	13.03	95.7	87.50	97.3	20.11	110.3	4.10	84.6	24.21	104.9?	12.91?	93.1	2.64	60.9	22.55	67.7	114.49	98.8?	19.77?	56.7?	134.25?	95.8
1970-71	61.35	80.4	10.15	74.6	71.52	79.6	12.33	67.6?	3.02	62.3	15.35	65.5	18.56?	77.6?	2.72	62.7	19.30	75.1?	90.27	77.9	15.93?	69.7?	105.17?	76.2
1971-72	62.38?	91.5?	9.36?	68.8	71.74	79.8	10.19	55.9	3.36	69.3	13.55?	59.7?	15.83?	74.1?	3.02	69.6?	18.85	78.3?	85.40	70.?	15.?	69.0?	104.14?	75.?

WESTERN RIVERS RIM-STATION INFLOWS

Years	RIM-STATION INFLOWS																							
	INDUS AT KALAGAGH				JHELUM AT MANGLA				CHENAB AT MARALA				TOTAL											
	KHARIF	RABI	ANNUAL	% of	KHARIF	RABI	ANNUAL	% of	KHARIF	RABI	ANNUAL	% of	MAF	AVG	MAF	AVG								
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
1972-73	67.00	67.6	12.58	92.4	79.58	88.5	17.81	97.7	7.15	147.6	24.96	108.2	16.81	78.6	4.72	108.8	21.53	83.7	101.62	87.7	24.45	107.3	126.07	90.9
1973-74	95.27	124.9	11.42	83.9	105.69	118.7	22.13	121.4	4.31	89.0	26.44	114.6	27.57	129.0	3.39	78.2	30.96	120.4	144.97	125.1	19.12	83.9	164.09	118.3
1974-75	52.32	68.6	10.87	79.8	63.19	70.3	12.75	70.0	3.57	73.7	16.32	70.7	14.40	67.4	3.83	88.3	18.23	70.9	79.47	68.6	18.27	80.1	97.74	70.5
1975-76	68.24	89.5	13.05	95.9	81.29	90.4	20.30	114.4	5.09	105.0	25.39	110.0	22.76	129.9	5.08	117.1	32.84	127.7	116.30	100.4	23.22	101.9	139.52	100.6
1976-77	70.79	92.8	10.66	78.3	81.45	90.6	20.62	113.1	4.03	83.2	24.65	105.8	25.44	119.0	3.74	86.2	29.18	113.5	116.85	100.8	18.43	80.8	135.28	97.5
1977-78	68.20	89.4	13.03	95.7	81.23	90.4	14.54	79.8	5.09	105.0	19.63	85.1	21.62	101.1	4.98	114.8	26.60	103.4	104.36	90.0	23.10	101.3	127.46	91.9
1978-79	90.81	119.0	15.77	115.8	106.58	118.6	19.73	108.2	4.89	100.9	24.62	106.7	26.91	125.9	5.37	123.8	32.26	125.5	137.45	118.6	26.03	114.2	163.48	117.9
1979-80	73.01	95.7	13.98	102.7	86.99	96.8	15.51	85.1	5.20	107.3	20.71	89.8	20.32	95.8	3.96	91.3	24.28	94.4	108.84	93.9	23.14	101.5	131.98	95.2
1980-81	71.60	93.9	15.16	111.4	86.76	96.5	17.73	97.3	5.71	117.8	23.44	101.6	20.48	95.1	5.71	131.7	26.19	101.8	109.81	94.8	26.58	116.6	136.39	98.3
1981-82	75.87	99.5	14.07	103.3	89.94	100.0	18.37	100.8	4.22	87.1	22.59	97.9	23.45	109.7	4.64	107.0	28.09	109.2	117.69	101.6	22.93	100.6	140.62	101.4
1982-83	58.57	76.8	14.67	107.6	73.24	81.5	15.65	85.9	5.68	117.2	21.33	92.4	22.88	107.0	4.92	113.4	27.80	108.1	97.10	83.8	25.27	110.8	122.37	88.2
1983-84	79.36	104.0	14.55	106.9	93.91	104.5	22.72	124.6	3.50	72.2	26.22	113.6	26.20	122.6	3.62	83.5	29.82	116.0	128.28	110.7	21.67	95.1	149.95	108.1
1984-85	79.05	103.6	13.12	96.4	92.17	102.5	15.66	83.9	3.01	62.1	18.67	80.9	21.28	99.5	2.80	64.6	24.08	93.6	115.99	100.1	18.93	83.0	134.92	97.3
1985-86	60.22	78.9	15.61	114.7	75.83	84.3	12.07	66.2	5.57	115.0	17.64	76.5	19.37	90.6	4.86	112.1	24.23	94.2	91.66	79.1	26.04	114.2	117.70	84.9
1986-87	73.57	96.4	17.54	128.8	91.11	101.3	20.62	113.1	7.22	149.0	27.84	120.7	22.19	103.8	5.51	127.0	27.70	107.7	116.36	100.4	30.27	132.8	146.65	105.7
1987-88	70.00	91.8	18.03	132.4	88.03	97.9	21.38	117.3	6.45	133.1	27.83	120.6	20.41	95.5	4.80	110.7	25.21	98.0	111.79	96.5	29.28	128.4	141.07	101.7
1988-89	89.36	117.1	15.37	112.9	104.73	116.5	19.74	108.3	4.24	87.5	23.98	103.9	27.46	128.5	5.23	120.6	32.69	127.1	136.56	117.8	24.84	109.0	161.40	116.4
1989-90	64.26	84.2	16.94	124.4	81.20	90.3	18.01	98.8	6.70	138.3	24.71	107.1	19.74	92.3	5.67	130.7	25.41	98.6	102.01	88.0	29.31	128.6	131.32	94.7
1990-91	87.85	115.2	20.89	153.4	108.74	121.0	19.71	108.1	7.69	158.7	27.40	118.8	23.42	109.6	6.56	151.3	29.98	116.6	130.98	113.0	35.147	154.1	166.12	119.8
1991-92	93.14	122.1	19.04	139.9	112.18	124.8	25.13	137.9	5.98	123.4	31.11	134.8	23.26	108.8	5.55	128.0	28.81	112.0	141.53	122.1	30.57	134.1	172.10	124.1
1992-93	90.84	119.1	19.06	140.0	109.90	122.2	25.18	138.1	6.82	140.8	32.00	138.7	22.60	105.7	5.18	119.4	27.78	108.0	138.62	119.6	31.06	136.2	169.68	122.3
1993-94	66.45	87.1	15.32	112.5	81.77	91.0	18.70	102.6	4.01	82.8	22.71	98.4	19.53	91.4	3.47	80.0	23.00	89.4	104.68	90.3	22.807	100.0	127.48	91.9

Appendix – I Continued

	At Kalabagh MAF			At Mangla			At Marala			Total		
	Kharif	Rabi	Annual	Kharif	Rabi	Annual	Kharif	Rabi	Annual	Kharif	Rabi	Annual
Period 72 years (1922-23 TO 1993-94)												
Average	76.29	13.61	89.90	18.23	4.85	23.07	21.38	4.34	25.71	115.83	22.80	138.69
Maximum	99.84	20.89	120.09	25.60	8.15	32.74	30.70	8.39	35.13	154.74	35.14	186.79
Minimum	52.84	9.36	63.19	10.19	3.01	13.55	14.40	2.29	18.23	79.47	15.58	97.74
PRE MANGLA 45 YEARS (1922-23 TO 1966-67)												
Average	77.51	13.05	90.56	18.24	4.70	22.94	21.18	4.26	25.44?	116.93	22.01	138.95
Maximum	99.84	20.25	120.09	25.60	8.15	32.74	30.70	8.39	35.13	154.74	3.09?	186.79
Minimum	57.07	10.25	69.73	11.81	3.04	15.35	16.36	2.29	18.65	89.95	15.55	109.87
PRE TARBELA 54 YEARS (1922-23 TO 1975-76)												
Average	76.48	12.92	89.39	17.99	4.68	22.67	20.97	4.18	25.15	115.44	2.76?	137.21?
Maximum	99.84	20.25	120.09	25.60	8.15	32.74	30.70	8.39	35.13	154.74	34.09?	186.79
Minimum	52.32	9.36	63.19	10.19	3.02	13.55	14.40	2.29	18.23	79.47	15.55	97.74
POST TARBELA 18 YEARS (1976-77 TO 1993-94)												
Average	75.72	15.71	91.43	18.95	5.33	24.26	22.59	4.81	27.40	117.25	26.85?	143.1?
Maximum	93.14	20.89	112.18	25.18	7.69	32.00	27.46	6.56	32.69	141.53	35.14?	172.10
Minimum	58.57	10.66	73.24	12.07	3.01	17.64	19.37	2.80	23.00	91.65	18.43	117.70
POST TARBELA NO OF DRY YEARS												
	11	3	9	7	6	7	7	5	6	5	3	9
POST TARBELA NO OF WET YEARS												
	7	15	9	11	12	11	11	13	12	10	15	9

Additional Western River Inflow Data for the Years 1994-2003

Year	Indus at Kalabagh			Jhelum at Mangla			Chenab at Marala			Western River Flowing Total (MAF)		
	Rabi	Kharif	Annual	Rabi	Kharif	Annual	Rabi	Kharif	Annual	Rabi	Kharif	Annual
94-95			109.120			26.491			30.200			165.811
95-96			98.819			28.074			31.875			158.768
96-97			100.316			29.043			31.888			161.247
97-98			89.932			24.024			28.294			142.249
98-99			99.890			21.722			27.942			149.553
99-2000			92.089			14.430			23.052			129.571
2000-01			70.408			12.550			19.930			102.887
2001-02			66.378			11.889			18.895			97.163
2002-03			77.129			17.403			23.491			118.022

INDUS RIVER SYSTEM
Losses (-) and gains (+)

Year	T O T A L			S Y S T E M (MAF)			
	Kharif	Rabi	Annual	Kharif	Rabi	Annual	
1985-86	-14.83	-1.66	-16.49	-8.66	-0.74	-9.40	
1986-87	-19.69	-2.66	-22.35	-29.38	-1.34	-30.72	
1987-88	-17.42	-3.15	-20.57	-8.18	-1.62	-9.80	
1988-89	-26.51	3.30	-23.21	-26.86	-2.18	-29.05	
1989-90	-13.83	-2.31	-16.41	-12.87	+0.56	-12.31	
1990-91	-23.27	-1.24	-24.51	-14.12	-11.73	-12.39	
1991-92	-17.39	-0.81	18.20	-17.04	+3.21	-13.63	
1992-93	-8.82	9.75	0.93	-18.59	+10.32	-8.27	
Pre-Mangla Average (1940-41 to 1996-67)	-20.23	5.71	-14.52	-5.44	0.62	-4.82	(33%)
Post-Mangla & Pre-Tarbela Average (1967-68 to 1976-77)	-16.04	0.79	-15.25	-14.35	0.44	-13.91	(91%)
Post-Mangla & Post-Tarbela Average (1967-68 to 1992-93)	-13.85	2.08	-11.77	-12.73	0.62	-12.11	(103%)
Long Term Average (1940 to 1992-93)	-16.98	3.93	-13.05	-9.01	0.62	-8.39	(64%)

Figures in brackets indicate annual Sukkur-Kotri reach loss as percentage of the total system

Reference: WAPDA 1994. Indus River and Canal System Water Related Data. Accord Documents and Studies. Technical Committee on Integrated Water Resources Development Programme 1(3)a sheet 2 of 2

Appendix – III

BALANCE RIVER SUPPLIES FOR FURTHER DEVELOPMENTS
BASED ON POST-TARBELA (1977-94) ANNUAL ESCAPAGES
BELOW KOTRI

BALANCE RIVER SUPPLIES (MAF)	AVAILABILITY	
	Years	Percent
0	2/18	11
6	13/18	72
8	12/18	67
11	9/18	50
14 And Above	7/18	39

Reference: WAPDA 1994. Indus River and Canal System Water Related Data. Accord Documents and Studies. Technical Committee on Integrated Water Resources Development Programme. Table III(5)-a

Appendix – IV

Long-Term Average Flows Downstream Kotri Barrage (MAF)

Period	Pre-Kotri 1937 to 1954	Post-Kotri 1955 to 1975	Post-Tarbela 1976 to 2004
April	2.594	1.397	0.805
May	6.010	2.680	1.328
June	9.719	5.281	1.639
July	16.430	13.181	6.222
August	24.131	21.326	14.345
September	12.773	12.589	7.044
October	3.749	3.139	0.996
November	1.306	0.721	0.194
December	0.938	0.529	0.137
January	1.243	0.867	0.316
February	0.521	0.330	0.169
March	1.105	0.277	0.247
Kharif	71.656	56.455	31.383
Rabi	8.862	5.862	2.058
Annual	80.52	62.32	33.44

Reference: Water escapages below Kotri Study I, Col. I Main Report Government of Pakistan October 2005, Ministry of Water and Power and Federal Flood Commission.