Public Policy and Administration Research
ISSN 2224-5731(Paper) ISSN 2225-0972(Online)
Vol.3, No.1, 2013

Ownership and Management of Natural Resources in Federal Systems: Challenges, Prospects and a Way Forward For Balochistan

Saubia Ramzan

Institute of Management Sciences, University of Balochistan, Pakistan.

Saubia7@yahoo.com

Abstract

In the perspective of divided societies, there has been a hot debate on the issue of natural resources where asymmetrical geographic distribution of natural resources corresponds with religious, socio-ethnic and linguistic divides. Such issues appear to be salient in the federal framework having a significant place in the decentralized systems. The management and provision of natural resources deal with the treatment of revenue and fiscal issues in the developed regions around the globe, whereas, in the developing part, natural resources are deemed as major source of wealth which leads towards the notion of an equitable shared national heritage. This gives rise to the increased autonomy over the natural resources from the local communities. The scaffold about the treatment of natural resources aggravates the conflicts among nations resulting in a strong ownership reaction by local communities in terms of development and revenue generation.

The core theme of this paper is concerned with the notion of ownership and management of natural resources in federal systems with reference to Balochistan province. The autonomy over natural resources has been debated in context of federal systems. Natural resources such as water, oil and gas, minerals, forests and fisheries have been considered as prime source of income generation. The weak governance of such resources and flux in the distribution of revenue lead towards identity-based differences among local communities. This theory caused a huge shift in the societies for economic integration and growth through autonomy over resources which eventually have paved the ways for opting greater responsibilities. On the other hand, the challenge to balance out the local interest for the significance of natural resources in connection to the overall national progression is faced by the governing bodies. The facts reflect that there are sufficient mineral deposits in Balochistan and optimum utilization can be made possible only by encouraging foreign capital investment and technology. The best solution for this is to remove the feeling of mistrust and unrealistic presumptions by granting autonomy to the masses and state of Balochistan. Most significant aspects are the availability of improved infrastructure and advance communication to the region and the matters relating to power generation projects must be handled by the provincial government so that the hidden potentials can be revealed by the province as a matter of priority.

The 18th amendment, its implementation and Balochistan Package appear to be an uncertain and complicated concern regarding provincial autonomy. The political, economic and administrative matters seem to be contaminated with the differences among masses of the province which has badly hampered the economic growth of the region. A mixed method research about the issue assisted to carry out a multidimensional analysis of the relevant facts about the issue. Data about allocation of natural resources and its analysis through a survey involving semi-structured interactive sessions of respondents and literature review turned up into some useful recommendations and a way-forward for the autonomy and management of natural resources in a true federal state. Various data collection techniques have been employed in order to study the variables by triangulation approach to substantiate the findings.

Keywords: Natural Resources, Ownership, Federal Systems, Balochistan, Control.

1. Introduction

Natural and energy resources have critically been debated in the federal systems around the world. Pakistan is one of those countries where the conflicts among federating units and federal government remained a serious cause of apprehension on this topic. This perplexing concern has eventually resulted in the inability of the state to exchange such valuable resources with the overall progression and improved economic growth. Moreover, the idea of decentralization of natural resource management refers that local and community-level institutions have become assertive in managing the local resources. The approach of decentralization has significant implications for resource tenure. Besides these implications, changes in resource tenure affect the entire social fabric of communities (Bruce,

2002:10). This idea is well supported as follows;

> "The essence of federalism is the decentralization of decision making over some set of economic issues to lower levels of government. Decentralization is a very broad concept. All nations – even so-called unitary ones, with one main level of government that oversees all others – must of necessity engage in some sort of decentralization. For example, public services delivered to persons must at least be administered by agencies close to those being served."(Boadway and Shah, 2009:61)

The problem has now been indicated as a "resource curse" which referred to a phenomenon denoting an inverse relationship between endowment of natural resources and economic growth (Duruigbo, Emeka: 2006). The scenario in Pakistan about ownership of natural resources has become a major controversy among various national stakeholders that has hampered the economic development of the country. Considering the global and regional scenario, it is indispensable that a huge internal transition in Balochistan province is required instead of diverting the issue. It is therefore emphasized that the existing issue of trust deficit among federal and provinces need to be dealt with urgency so the deprivation can be addressed as major policy-change. The integrated rationale of this paper is to chalk out a methodical framework about the under-consideration issue. The core purpose of this paper is to explore various aspects of discussion in order to arrive at some intense frame of propositions and a way-forward. Mixed method research approach of collecting data through various sources including structured observations from local communities and policy advisory group members resulted in an effective way-forward that would assist to highlight the issues related to management and ownership of natural resources in Balochistan to empower the region through autonomy and sovereignty with full potential in order to transform the society into progressed social structure. Moreover, literature review supported to analyse the issue in order to draw inferences about the topic.

The geological setting of Balochistan province is and Upper Cretaceous to recent structurally defined basin related to under-thrusting of the Arabian Plate beneath the Eurasian margins. Pakistan is subdivided into three basins named as Balochistan, Indus and Axial basin while basins are further subdivided into Geological Provinces (GPs), such classifications are restricted to the mountain ranges like Sulaiman, Kirthar and Trans-Indus ranges or the ranges exposed like Kohat and Potwar. Therefore, this classification of GPs is suffixed by "Surface Geology" as Sulaiman GP, Kirthar GP (Surface Geology). Moreover, regarding petroleum geology, there is no such oil and gas discovery in the basin, however, the potentials can be determined by analysis. The formation is constituted by several rocks including Sedimentary, Source, Reservoir, Seal, Trap, Maturation and Migration rocks.

Pakistan Basin Study reveals that Pakistan's sedimentary basins continue to hold promise for new exciting discoveries particularly in offshore which is relatively under-explored and has become main area of focus after improved policy incentives based on production sharing agreement (Ministry of petroleum and Natural Gas, Government of Pakistan: 2012). It further states that significant number of wells have been drilled in the sedimentary basins of Pakistan covering onshore and offshore area while oil and gas fields have been discovered in various other basins of Pakistan which gives drilling density of 1.99 wells per 1000sq.km and success rate of 1:3:3. Despite lower drilling density as compared to global drilling density of 10 wells per 1000 sq.km, the success rate of Pakistan can be compared favorably with international success rate of 1:10.

Moreover, the report elucidates that discovery of Sui-Gas Field serves as the first major landmark in the search for hydrocarbons in Pakistan. In this regard, several foreign oil companies took keen interest in carrying out exploration in Balochistan. Regarding energy supply, the deficiency of energy supply in Pakistan is evident which is much stressed in the realization of search for oil. On the other hand, in the search of deposits of natural gas, Pakistan has been rewarded, the discovery of which combined with sizeable exploitation of hydro-electric resources that sustained in the initial stages of the country's industrial development (Fig. B).

According to Oil and Gas Journal Overview –OGJ (2013), Pakistan had proven oil reserves of 300 million barrels as of January 2006 while the quantity of produced oil comes from proven reserves located in the southern half of the country with three largest oil-producing fields located in the Southern Indus Basin (Fig. C). Additional producing fields are located in the Middle and Upper Indus Basins. It is further highlighted in the journal overview that OGJ

that Pakistan had 23 trillion cubic feet (Tcf) of proven natural gas reserves in 2006. The bulk of these reserves are located in the southern half of Pakistan. In 2004, Pakistan produced and consumed 968 billion cubic feet (Bcf) (Clough: 2008). Moreover it has been revealed that Pakistan's energy demand supply gap has been estimated at 26 MMSCMD by 2011, 77MMSCMD by 2015 and 293MMSCMD by 2025 due to the domestic gas sources are depleting and demand for gas grows in line with economic expansion. The statistics compiled by the provincial finance department reflecting that Pakistan is a federal republic constituting four provinces with imbalance population, all provinces are the producer of oil and gas with asymmetric proportions. Therefore, the provinces with larger production are not getting due share of their taxes which causes tension between federal and provincial governments. It has been revealed during the survey that decision on energy projects should be resolved by considering the due share and ownership of federating units rather than native political and individual interests. The facts and figures reveal that Pakistan's energy sector is in a state of crisis and has negatively impacted the social and economic growth. Pakistan, over the past decade has raised the demand for energy. In this regard, no meaningful measures have yet been taken to generate the required energy sources and install new capacity. Eventually, the demand exceeds supply and hence masses suffer from the acute shortage of energy in the country. Management and ownership for the composition of energy-mix encompassing oil, gas, hydro-electricity, nuclear, coal, electricity, wind, waste, solar power under 18th amendment are the solution to control energy crisis as energy sector forms the backbone of the country.

Balochistan province is the largest and least developed region of Pakistan in which land area constitutes about 43% of total area and mountainous 55% with the climate ranging between arid and semi-arid. The average annual rainfall varies from 50 mm in the west to over 400 mm in the small areas in the east of province. The mountains are not hospitable while the valleys contain alluvial soil and support high value irrigated agriculture. In the agrarian region, the economy of the province is lower as compared to the rest of the provinces in the country. Almost, 65% of the provincial labor force is engaged in agriculture sector thus contributing to around 30% of the provincial GDP. Referring to the Census of 1998, the reports described that the population of the province was 6.56 million and has grown to the figure of 8.12 million in 2007 (National Institute of Population Studies: 2007). Mainly the rural social se-up is tribal and nomadic in nature.

Referring to the geological setting, Balochistan is distinguished into zones of convergence and oblique faulting. These fault systems have direct relevance to hydro-geological control on groundwater reservoir. In this context, Sand Plains (Sand Dunes and Deserts), twenty six important faults have been identified. NIPS study further exposed that in consequence to the geodynamic evolution of the region, the stratigraphy of Balochistan appears to be complex and entails greater lateral variations in contemporaneous sedimentation. The sedimentary sequence is composed of calcareous and arenaceous rocks. No sedimentary rocks of deep origin are known and perhaps all the marine sediments in the province were deposited in shallow waters. The average annual precipitation of 18 hydrological basins of Balochistan based on data between 1890 and 2010 is given in the table 2.

According to the report of Irrigation and Power Department, Government of Balochistan (2011), irrigation system of province comprises of Patfeeder, Kirther, Uch, Faizabad and Mauthi canals fed from the Indus River according to Indus Water Accord 1991 share of Balochistan. Table 3 depicts the historic water share of Balochistan conferring the Accord 1991. In this context, two projects namely extension of Patfeeder Canal and construction of Kachhi Canal have been undertaken.

In the same manner, table 4 shows canal wise availability of water in the province.

The extension of Patfeeder Canal and construction of Kachhi Canal which together can utilize about 805.5 million m^3 (0.653 MAF) of balance allocated share, the allocation is shown in the table 5. The report of Irrigation & Power Department, Government of Balochistan states that according to Water Accord of 1991, the province of Balochistan has 12% share in flood and future development of water reservoirs in Pakistan. The report further elucidates that irrigation system of Balochistan by explaining that two districts Nasirabad and Jaffarabad are the only regions that are fed from Indus River through Patfeeder and Kirther canal systems. The perennial surface sources are almost non-existent in the rest of the province and all major rivers /or streams are ephemeral while the perennial flow of some of the streams is mainly derived from springs emanated from groundwater.

Referring to the non-irrigation system, the survey revealed that Irrigation and Power Department has constructed a considerable number of perennial and flood irrigation schemes and delay-action/storage dams for connecting perennial and flood flows in Balochistan. Moreover, structured observations reveal that Hub Dam which is the third largest water storage reservoir in Balochistan, constructed on the Hub River in the arid region north of Karachi on provincial border between Balochistan and Sindh by WAPDA during 1981. Water has been supplied for irrigation to the districts of Lasbella (27.4% of total allocated water) and domestic water supply for Karachi metropolitan (62.2% of total allocated water).

According to "Water Apportionment of Hub Dam: Water Conflict and Strategy for Resolution" by (Ahmad:2008), the Hub Dam is the 3rd largest water storage reservoir in Pakistan. It was constructed on the Hub River in the arid region north of Karachi on provincial border between Balochistan and Sindh by WAPDA during 1981. The reservoir largely supplies water for irrigation in the district of Lasbella of Balochistan (27.4% of total allocated water) and domestic water supply for the Karachi metropolitan (62.2% of total allocated water). The Accord of 1991 does not apportion waters outside the Indus basin, therefore, Hub River waters are not apportioned yet and water allocations made in the PC-I of the Hub Dam can best be considered as water entitlements. It further illustrates that the real spirit for the rivers of Balochistan not draining to the Indus River, the province has an exclusive right of developing those waters without affecting the established historical water rights were only for agriculture sub-sector of water use, where Sindh province is currently using only 1.78 mgd for agriculture which constitutes only 3.4%of total current water used for agriculture (52.33 mgd). Therefore, in consideration of this Accord, it is reasonable that doctrine of hydrography should be observed in this matter. This scenario would cause a great loss by such allocations of the principles of historical rights of water for agriculture.

It is eminent that differences about water entitlements and preferences for water usage seem to be misleading as the water entitlements need to be measured separately by considering the hydrography and geography instead of defining priorities for different sub-sectors of water use. The allocation of water between two governments reveals that 62% water was allocated for Karachi metropolitan for domestic use despite the fact that 71% catchment area of the dam falls in the region of Balochistan. Therefore, it has become indispensable to assess historical water rights on current utilization of water for agricultural purposes. Referring to the data from Irrigation Department, it has been affirmed that Balochistan contributes around 71% of water to reservoir so apportionment should be based on the equitable principles. Moreover, it was found out that a water resource monitoring system exists in the province for monitoring but the network is restricted due to lack of proper attention and funding. The responses from survey revealed that the global hydrographical criteria as "*the doctrine of absolute sovereignty*" need to be adopted for apportionment of water in various regions. From the catastrophic events of past, no lesson has yet been learnt as the controversy still exists over the denial of provincial political, economic and cultural autonomy in a federation. This situation has resulted in deprivation and masses of Balochistan have been suppressed whenever voice is raised for their rights. The doctrine of federalism lies in democracy in order to strengthen the bonds of solidarity in the campaign.

In the same context, differences on the issue of ownership, exploration and management of natural resources have been converted into a serious conflict among provinces and center. Taking into account the NFC award and "Aghaaz-i-Huqooq Balochistan" package, it initially served as a beacon light for the masses of deprived province but there is a dire need of fair implementation plans to bridge the lack of trust and shape the province into a national mainstream. However, it clearly states that leasing rights of exploration and exploitation, increase in royalty and usage should be the matter of provincial autonomy under the constitution. NFC award should address complete fundamental and fiscal autonomy so that the imbalance in adherent issues can be resolved on fair grounds. Although, some issues as collection of tax-heads for revenue generation have become more complicated phenomena. The revenue generation remains a hub of federation functions without jeopardizing the rights of natural resources of the provinces under the concept of provincial autonomy. It indicates provincial sovereignty over natural resources is a core purpose of improved public sector progression.

There is no substitute of water in the world so it needs significant planning and management in Balochistan as the province has been facing troubles in managing the appropriate reservoirs. Provincial opposition of construction of dams indicated that it has been a source of continuous inter-provincial dispute with Punjab and rest of provinces while there is a substantial skepticism about federal commitments to compensate and resolve the conflicts. Moreover,

in Balochistan, the opposition stems from the fear that water supply in the province will be diminished by construction of Kalabagh Dam, but even more from the perception that it favors Punjab province (IUCN:2010). It reflects the inner context of Balochi resentment over the action of federal government with the rest of provinces which lacked in parity principles. Inter-provincial water conflicts have now become relentless on the division of water and entitlement issue for sharing of shortages have taken a worst form of confrontation among the constituent units in Pakistan. In addition to the water entitlement, another question stems out that water entitlements are higher than the availability of water for diversion to canals as these entitlements are based on the fact that additional storage will be constructed to transfer water of a wet year to the dry year. In this regard, proper measures may be the need of time to adjust Water Apportionment Accord by allowing provinces to market their excess water and develop a reliable system of water measurement to resolve inter-provincial disputes of water.

Conversely, the data about the production of oil and gas from Balochistan province depicted that oil and gas 98.52 barrels per day and 745.81 million cubic feet per day respectively have been produced. Oil and gas have been produced by Pakistan Petroleum Limited (PPL) and Oil and Gas Development Company Limited (OGDCL) mainly from Pirkoh, Loti and Uch leases falling in Dera Bugti district (Pakistan Times, Federal Bureau: 2011). In this context, the analysis of Pakistan's total population that it comprises of 180 million composed of four provinces having unequal population such as Punjab 57%, Sindh 22 %, Khyber Pakhtoonkhawa 14% and Balochistan 5%. Additionally, there are Federally Administered Tribal Area 2% and Capital District of Islamabad 0.5% (Ahmad: 2010). However, in the NFC award, the share of federal government has been reduced to 44% in 2010-2011 and 42.5% beyond. The exceptional reduction in the federal government share and increase in provinces has caused the vertical imbalance for fiscal equalization. In the same context, provinces receive revenues for oil, gas, and net hydroelectricity profits through straight transfers as an additional share established by NFC award. Reko Diq is another serious problem that forms one of the world's largest reserves of gold and copper, discovered at Reko Diq in Chaghi area of Pakistan's southwest Balochistan province. According to development experts, some 12.3m tons of copper and 20.9 m ounces of gold lie in the Reko Diq area. The copper-gold deposits at Rekodiq are believed to be even bigger than those Sarcheshmeh in Iran and Escondida in chile (Pakistan Observer: 2011).

Moreover, relating to the hydroelectricity, only a minority 7.58 million population enjoys the electricity in the province comprising 404,000 consumers of electricity in Balochistan which has resulted in low per capita consumption-almost half of the average. In this regard, coal is another common fuel source for industry and energy generation which is also not yet properly explored and utilized in Balochistan. It is vital to use vast coal sources for energy generation while bio-gas and solar energy generation sources can be the best alternates in the province. Lack of communication, infrastructure and remoteness of area are the major issues in this context to be dealt with intelligence so that optimum utilization out of the hidden sources and potentials can be made possible in Balochistan. Furthermore, the matters relating to power generation projects need to be tackled by the provincial government in order to observe the doctrine of federalism.

The historical background of existence of Pakistan based on the principles of federalism that federalism and provincial autonomy have proved to be political slogans since its inception but the inner nature of federalism has been undermined since Pakistan came into being. The constitutional crisis has proved to be a source of political differences on the issue of federalism amongst federating units and central government. This scenario led towards promoting the notion of centralization of powers by alienating the federating units from the center through the use of force. Additionally, 18th amendment and its implementation in Balochistan province and Balochistan package seem to be incomplete and uncertain as it comprises of some very complicated concerns regarding unaddressed provincial autonomy. The 18th amendment and implementation plan, however, pave a way for negotiation among the leadership of political parties as a positive gesture by Government of Pakistan for settlement process. The troubled point is economic growth and ownership of natural resources in the province. Although, the major concerns to be dealt in Balochistan is administrative, economic and political mix that has proved to be contaminated in order to create differences among masses of the province and the treatment of military rulers. This situation has hampered the economic growth of the region which is a fundamental issue for the least developed province of Pakistan. In consequences of this scenario, the province has lost control over the management and exploration of natural resources mainly oil, gas, ports, lands and seacoast. On the other hand, federal government along with the international firms has been exercising its autonomy over exploration and management of such resources that has indeed created economic and political crises in the province.

According to Irrigation Department of Pakistan, Balochistan exists arid with scanty rainfall varying from 12 inches in the North to 4 inches per annum in the south while 18 major river basins generating about 10 MAF annually as recently assessed by consultants through a study carried out under funding of Asian Development Bank. It depicts that the main sources of irrigation such as canals, wells, tube wells, karezes/springs, sailabl/flood irrigation varies from 0.8 million acres to 1.50 million acres while total area under irrigation by all sources (Perennial cum floods) is 3,400 million acres, under which cultivable area comprises of 28.00 million acres (Fig. E).

In the same framework, there are proposed distinct components for water sources including restoration of water storage capacity and small scale irrigation schemes. The main sources of water are precipitation, canal and groundwater (shallow and deep) which is used for agriculture, whereas, flood water is also a source for using Spate irrigation that lacks any planning of groundwater. However, these sources may be improved if proper planning is concentrated on the schemes. Annual inspection 2009 jointly carried by consultants depicts that Mirani Dam just after completion, experienced supper flood of peak 500,000 cusecs at maximum conservation level of 244feet. There reservoir level rose to 271.40 feet above the spillway crest. The dam had played a significant role in minimizing damages at the downstream area by absorbing a significant quantity of flood peak in the reservoir (Water Wing – Annual Inspection 2009). Hence, there exists a dire need of construction of small dams in Balochistan province for proper management of water resources as a major concern of provincial government.

In continuation, it has been explored that the facts about minerals, oil and gas that forty minerals are exploited from Balochistan out of 50 in all over Pakistan in which copper and gold, sandak, rekodeq, chromite and coal forms up the major parts. There are metallic and non-metallic minerals available in Balochistan while non-metallic minerals are glamorous as metals ores but have good economic value, whereas, industrial minerals is important for the production of metals. It has been found out that technology, capital and export opportunities should be made available in the province to attract investments in other minerals as this treasure has been wasted in resentment and delay. It has also been indicated by structured observations from Policy Advisory Group that Balochistan has been the victim of war, depression and hunger by aggressive attitude towards marginalized communities by the unfair policies of state which has hampered the national and international investment opportunities. Key social indicators demonstrate that resource-rich region depicts a picture of least developed community of Pakistan.

It has been inferred that no such major steps have yet been taken to explore more oil as Oil and Gas Development Corporation was established in 1961 which subsequently incorporated as a joint stock company with listing at local stock exchanges under the brand of Oil and Gas Development Company Limited (OGDCL). However, the security issues created a constraint in exploring the hidden resources and implementation of developmental plans. Moreover, weak law and order situation hampers the exploration and production of oil and gas resources in the province as many of the developmental projects have not been implemented successfully. The process lacks in proper management and availing the opportunity cost which relates to the planning and implementation of projects. Many of the foreign companies are willing to enter Pakistan in search of new oil supply source which can open new horizons for an oil province resulting in several oil discoveries.

Kachhi canal completion by stating that despite the existing scenario, natural resources have not always been perceived as significant part of the constitutions, therefore, the 18th amendment has focused the autonomy and sovereignty of natural resources to the owner regions. All the problems related to control and completion of natural resource projects need to be negotiated between provinces and federal government through agreements and treaties. Major stakeholders have yet to concentrate the issue of Kachhi canal as a matter of priority for accomplishment. The completion of Kachhi canal project will bring about 0.8 million acre of land under cultivation in the districts of Nasirabad, Jaffarabad, Bolan, Jhal Magsi and Dera Bugti but this project but this issue is yet to be resolved for Balochistan province. The phases of this project have been delayed due to lack of funding and conflicts on its branches. A consensus exist that controversy exist over the Reko Deq, Copper and Gold project. The project has been opposed by many quarters. Government of Pakistan may launch an information campaign disseminating true and realistic data information to correct public opinion to eliminate the unrealistic presumptions regarding uniqueness of mineral deposits in Balochistan. However, the reality is that Balochistan has rich mineral resources that could compete for the investment of foreign capital and technology.

Balochistan Package has been criticized by the masses of province that has been offered by present

Government that it seems to extract Balochistan's riches through an imposed so-called development process. However, no implementation has yet been seen on Balochistan Package to ease the tension among the masses of Balochistan. The lack of participation by the people of Balochistan has created resistance till the present scenario. The solution lies in the assertion of provincial rights of people of Balochistan. The feeling of mistrust and impractical presumptions should be removed in the province and sovereignty is supposed to be with the people of Balochistan to decide about their destiny.

The alternate sources of electricity, it was found out that Bio-gas and solar energy generation projects have been installed in many regions across the country so the same practices may be followed by Balochistan in order to produce more energy through alternate sources so the production and generation process of energy may not be hampered due to the unresolved issues between provinces and central government. A point of "strategy formulation" was debated that the masses and government of Balochistan should make a vivid and transparent process for need assessment thus availing the opportunities in time as much of the awareness has been created for the issues concerned. The economic analysis on which inflation rate can be controlled and contribute to increase self-sustainability of the province by implementation and control of specifically gas resources by the provincial government. Moreover, the results presented the idea for assistance from foreign companies that may be promoted for exploration and production of natural resources in the province to integrate the knowledge and skills of people of Balochistan which will definitely provide a strong platform to enhance overall development as well as increase self-reliance in the province. It has also been highlighted that large scale valid research activities are lacking in the province as research studies forms up new horizons for development in any discipline, therefore, it has become indefensible concern for provincial government to concentrate on the partnership of international integrated research projects to explore the innovative ways of production and generation of natural resources in Balochistan of sustainability.

2. A Way Forward

In consideration of the above discussion, some recommendations are sought out for future course of action regarding ownership and management of natural resources in federal systems. It has been proposed that constitutional devices should be adopted to safeguard the financial legislative and administrative concerns of province by ensuring full autonomy and control over the use, exploration and management of natural resources in Balochistan. It has been a practice in Pakistan that central part of government forms a ruling elite that involves in political manipulation which make centre stronger and powerful while other units serve as extensions rather than autonomous partners. In this context, provincial government should enjoy access and sovereignty over the control of natural resources including water, oil, gas and minerals in order to enhance productivity and generation for the overall progression of the region. An environment of cooperation among provincial and federal government on such issues should exist to chalk out the strategy for wealth sharing and related matters.

Likewise, an up-to-date reliable system of water measurement need to be rationalized to resolve inter-provincial disputes by allowing province of Balochistan to construct dams larger and smaller to ensure availability of water as per Water Apportionment Accord. In this way, the provinces may be enabled to market their excessive water so that sense of deprivation from entitlement can be eliminated by efficient use of water through transparency in distribution water. This practice will certainly strengthen the irrigation infrastructure. One of the most appropriate recommendations is that consensus need to be built for the available potential sites for construction of dams to address water shortage and generation of hydro-power to meet the future needs. Another proposition stemmed out from structured observations that there is an indispensable need to bridge the gap between Punjab province in order to cover up the shortage of energy and water though proper implementation of Accord to ensure the province of Balochistan to avail its full share. Punjab government is required to observe transparency in operation and management of river flows in the upper Indus basin to ensure the trust of Balochistan province while the equal revenue distribution from hydro-power generation has to be ascertained under the Accord. It has been stressed during the structured observation sessions that petroleum production in Balochistan needs proper attention specifically, asymmetry in oil and gas exploration activities should be handled by provincial government. It was proposed that revenue distribution should be made on equitable basis as these resources are originally located in Balochistan. According to an estimate made by government, approximately the exports of the processed metals from Reko Diq can bring at least $500 bn which can significantly modify the economic scenario of the country to least developed

province of Balochistan. The project should be taken over by the provincial government as a challenge in collaboration with the foreign assistance on technical and capacity building aspects. Moreover, regarding the exploration and management of minerals and other resources, the government of Balochistan should seek assistance from foreign companies and integrated partnerships are required to be developed for capacity building and technical skill development of the masses to achieve the desired ends. The Government of Balochistan needs a careful planning to implement a creative and conducive strategy for development and employment in the province.

Conclusion

It has been inferred from the debate that the implementation of 18th amendment and Balochistan Package regarding provincial autonomy appear to be crucial and complex apprehension for the masses. The political, economic and administrative matters have been entangled with the conflicts among masses of the province which has dreadfully hindered the economic progression of the region. The province is constantly losing the right of ownership for the exploration and management of natural resources mainly oil, gas, ports, land and seacoast. On the contrary, autonomy over the exploration of these resources by international firms along with the federal government has resulted in economic and political crunch. Moreover, the major concern for the province is to properly manage the smaller dams in order to deal with the water shortage in Balochistan. Chromite, coal, copper, gold metallic and non-metallic minerals compose the economic value of the province. In this context, technology, capital and export opportunities should be made available in order to address the deprivation and hostility of marginalized communities of the province. Balochistan has been the victim of war, depression and hunger by aggressive attitude towards marginalized communities by the unfair policies of state which has hampered the national and international investment opportunities. Key social indicators demonstrate that resource-rich region presents a picture of least developed community of Pakistan. Therefore, management and control over natural resources should principally be the sole concern of province by promoting foreign investment and capacity building of human resource for a self-sustained society. The notion of empowering the federating unit has been emphasized for converting the deprived community into progressed structure. The Government of Balochistan needs to strive for smart planning and productive strategy formulation for the overall advancement of the resource-rich region while the central government has to observe the canon of parity and federalism.

References

Ahmad. G. (2010), “Conference on Oil and Gas in Federal Systems” World Bank Headquarters, Washington DC.

Ahmad. S. (2008), “Water Apportionment of Hub Dam: Water Conflict and Strategy for Resolution” Policy-Briefing, Government of Balochistan-ADB and Royal Government of Netherland.

Anderson. G. (2012), “Oil and Gas in Federal Systems”, Oxford University Press, Canada.

Axmann. M. (2008), “A Study on Early Period of Balochistan – Back k to the Future”, Oxford University Press.

Bacon. R., Bhattacharya. S. and Kojima.M. (2009), “Changing Patterns of Household Expenditures on Energy: A Case Study of Indonesia and Pakistan. World Bank.

Boadway. R. and Shah. A. (2009), “Fiscal Federalism: Principles and Practice of Multiorder Government, Cambridge University Press, New York, USA.

Bruce (1998), a:1; FAO (2002:10), “Resource Tenure and Property Rights: Access and Ownership”, World Resource Institute. USA.

Duruigbo, Emeka, (2006), “Permanent Sovereignty and peoples’ ownership of natural resources in international law, BNET, CBS Business Network News.

Haysom. N. and Kane. S (2009), “Negotiating Natural Resource for Peace”, Henry Dunant Centre for

Humanitarian Dialogue. Geneva-Switzerland.

“Investment Opportunities in Pakistan’s Upstream in Oil & Gas Sector” Ministry of petroleum and Natural Gas, Government of Pakistan, www.mpnr.gov.pk

“Hopes for Balochistan”, (2011), Pakistan Observer.

“Investment Opportunities in Pakistan’s Upstream in Oil & Gas Sector” (2012), Pakistan.

Irrigation & Power Department Government of Balochistan, http://www.balochistan.gov.pk/phe-functions-of-department.html

IUCN (2010), "Draft –Pakistan Water Apportionment Accord Resolving Inter-Provincial Water Conflicts –Policy Issues and Options", Balochistan Partnership for Sustainable Development, IUCN Pakistan.

Kasanga, K.R. (2002), Integrating land issues into poverty reduction strategies and the broader development agenda: The case of Ghana. Regional Workshop on Land Issues in Africa and the Middle East. Kampala, Uganda.

Langdon D. Clough, (2008), "Energy Profile in Pakistan"

"Report by Ministry of petroleum and Natural Gas", Government of Pakistan, (2012), Pakistan.

NIPS, National Institute of Population Studies, (2007), Pakistan.

"Oil and Gas Journal Overview –OGJ", (2013), Pakistan.

"Pakistan Producing 15% of Total Oil Consumption" (2011), Pakistan Times, Federal Bureau.

Report by Irrigation Department Balochistan (2011).

The Economic Survey of Pakistan for 2011/2012, Ministry of Finance, Government of Pakistan.

http://www.finance.gov.pk/finance_survery_chapter.aspx

The Encyclopedia of Earth, Washington D.C, http://www.eoearth.org/article/Energy_profile_of_Pakistan

"Water Wing –Annual Inspection, (2009),". Government of Balochistan

List of Acronyms

Bcf	Billon Cubic Feet
Bn	Billion
B.Rs	Billion Rupees
CCEP	Centre for Civic Education Pakistan
GDP	Gross Domestic Product
GPS	Geological Provinces
MAF	Million Acre Feet
Mgd	Million Gallons per Day
MM^3	Cubic Millimeter
MMCMD	Million Standard Cubic Meter per Day
NFC	National Finance Commission
NPPS	National Institute of Population Studies
OGJ	Oil and Gas Journal
OGDCL	Oil and Gas Development Company Limited
PPL	Pakistan Petroleum Limited
Sq.km	Square Kilometer
Tcf	Trillion Cubic Feet

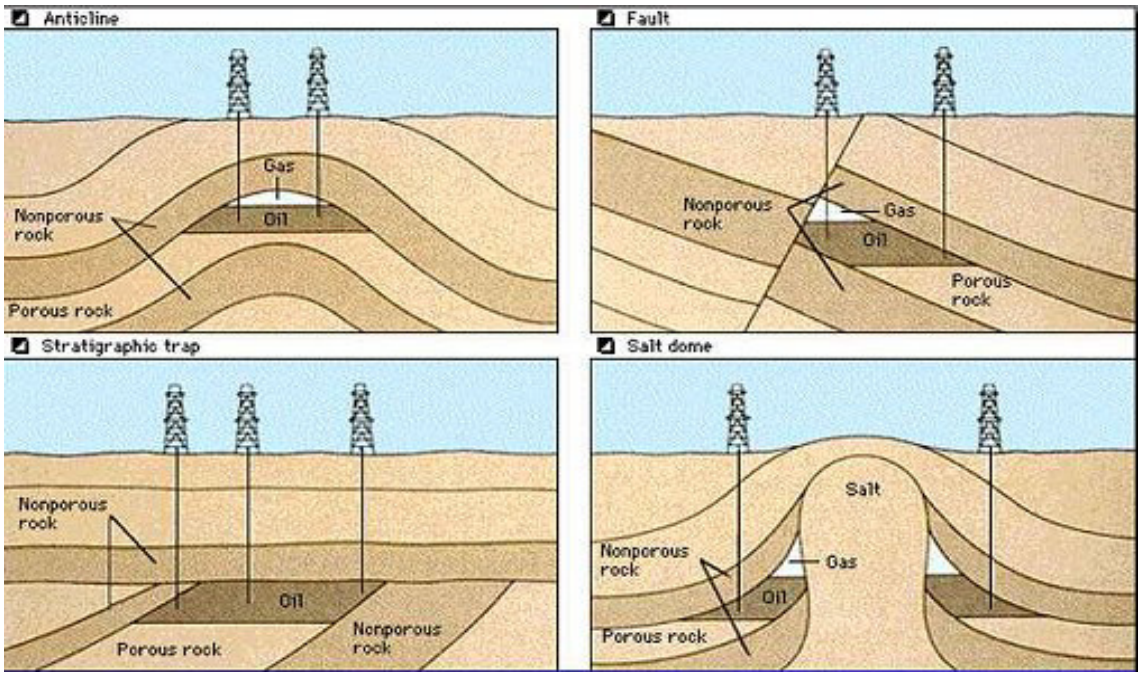

Fig: A: Oil and gas are generated through natural processes of millions of years (Source: Investment Opportunities in Pakistan's Upstream in Oil & Gas Sector: 2012)

Total Sedimentary Area: 827,268 Sq.km
Area under Exploration: 257,410 Sq.Km
Drilling Density: 1.99 wells/1000 Sq.Km

Expl.Wells	**725**
Dev.Wells	**890**
Total	**1,1615**
Discoveries	**219**
Oil	**54**
Gas	**165**
Success Rate	**1:3:3**

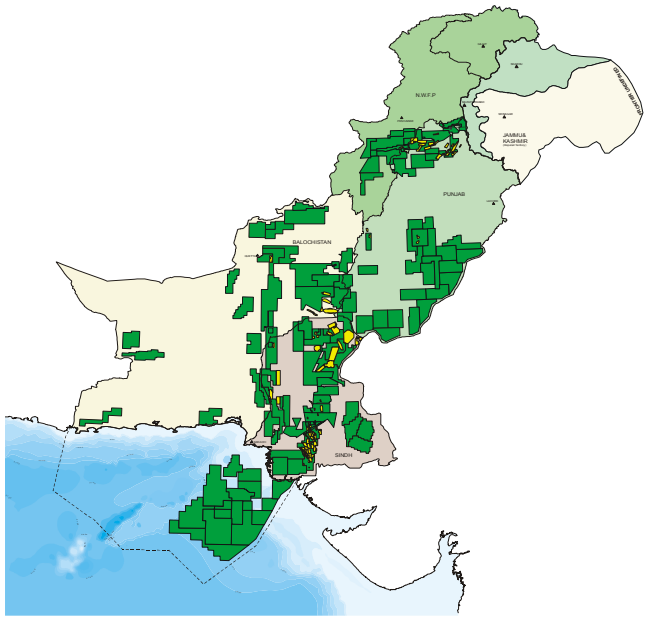

Fig. B: Gas Exploration Activities

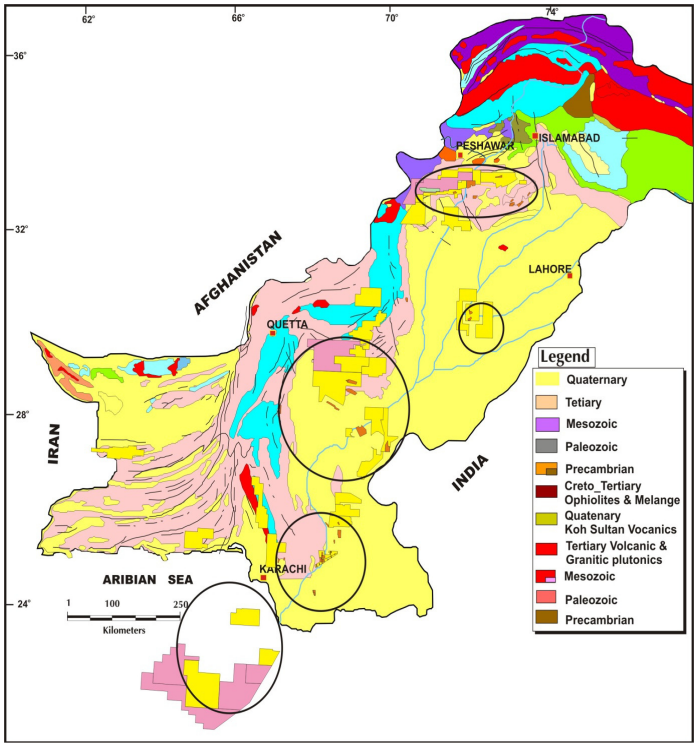

Fig. C: Sedimentary Basins /Oil & Gas Occurrence in Pakistan

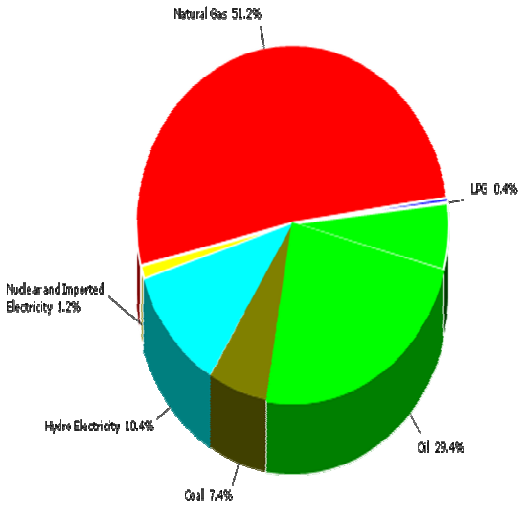

Fig. D: Oil & Gas meet 81 % requirement

Oil Import Bill: $ 11 billion

Fig. E: Sources of Water for Agriculture Use

Area Cultivated

. Perennial/Canals = 1.200 Million Acres

. Wells = 0.020 Million Acres

. Tube wells = 1.000 Million Acres

. Karezes/Springs = 0.180 Million Acres

Sailab/Flood Irrigation = 1.000 Million acres

(Varies from 0.8 Million Acres to 1.50 Million Acres)

Total area under Irrigation by all sources (Perennial cum floods) = 3.400 Million acres

Total Cultivable Command is Available in Balochistan = 28.00 Million acres

Fig. F: CURRENT / PROPOSED INTERVENTION S FOR HARNESSING OF FLOOD WATER COMPLETED DAMS

- ***Mirani Dam District Kech. (Implemented by WAPDA)***
  - Approved Cost : Rs. 5861.00 million
  - Storage Capacity : 305000 Acre feet
  - Command Area : 33,000 Acres
  - Status : Dam operationalized during 2008
- ***Sabakzai Dam District Zhob. (Implemented by WAPDA)***
  - Approved Cost : Rs. 1960.82 million
  - Storage Capacity : 32,000 Acre feet.
  - Command Area : 8000 Acres
  - Status : Dam operationalized during 2009.
  - (Source irrigation department)

	Balochistan	KP	Sindh	Punjab	Pakistan
Royalty on crude oil	0	2469	3915	1429	7813
Royalty on natural gas	4443	2729	18129	1214	26515
GDS	5632	2159	19915	1631	29338
E. Duty on gas	1371	191	4545	191	6458
Total	11446	7548	46504	4465	70124
%age	17.0	**6.6**	**14.2**	**1.0**	**3.0**

Table 1: Oil and gas revenues (2009-10)B.RS

Basin	Area (km^2)	Basin	Area (km^2)
Dasht River Basin	27690	Kaha Basin	11995
Gaj River Basin	6025	Kand Basin	1115
Gawader Basin	17065	Kunder River Basin	6224
Hamun-e-Lora Basin	8260	Mula River Basin	16262
Hamun-e-Mashkel Basin	84916	Nari River Basin	22298
Hingol River Basin	35736	Pishin Lora Basin	18133
Hub river Basin	8610	Porali River Basin	18540
Kachhi Plain Basin	31495	Rakhshan River Basin	12339
Kadanai Basin	4274	Zhob River Basin	16425

Table. 2: Area of hydrological basins of Balochistan

Kind of Water Share	Availability MM^3	Availability MAF
Perennial Flow as per Accord	4774 million m^3	(3.870 MAF)
Share from Mangla dam raising	444 million m^3	0.360 MAF)
Total Available Flow	**5218 million m^{3}3**	**4.230 MAF**

Table 3: Historic Water Share of the Province as per Indus Water Accord of 1991

Canal	Availability MM3	Availability MAF
Patfeeder Canal	2295 million m3	1 .8604 MAF
Khirther Canal	1059 million m3	0.8586 MAF
Uch Canal	122 million m3	0.0989 MAF
Manuthi Canal	70 million m3	0.0566 MAF
Khan Wah, Faizabad and Direct Outlets	219 million m3	0.1775 MAF
Total Present Utilization	3765 million m3	3.0520 MAF

Table 4: Canal-wise Detail of Availability of Water

Projects	Utilization MM3	Utilization MAF
Patfeeder Canal Remodeling & Extension	249.20 million m3	0.2020 MAF
Kachhi Canal	556.30 million m3	0.451 MAF
Total Proposed Future Utilization	805.50 million m3	0.653 MAF

Table 5: Detail of the Two Major Projects

This academic article was published by The International Institute for Science, Technology and Education (IISTE). The IISTE is a pioneer in the Open Access Publishing service based in the U.S. and Europe. The aim of the institute is Accelerating Global Knowledge Sharing.

More information about the publisher can be found in the IISTE's homepage: http://www.iiste.org

CALL FOR PAPERS

The IISTE is currently hosting more than 30 peer-reviewed academic journals and collaborating with academic institutions around the world. There's no deadline for submission. **Prospective authors of IISTE journals can find the submission instruction on the following page:** http://www.iiste.org/Journals/

The IISTE editorial team promises to the review and publish all the qualified submissions in a **fast** manner. All the journals articles are available online to the readers all over the world without financial, legal, or technical barriers other than those inseparable from gaining access to the internet itself. Printed version of the journals is also available upon request of readers and authors.

IISTE Knowledge Sharing Partners

EBSCO, Index Copernicus, Ulrich's Periodicals Directory, JournalTOCS, PKP Open Archives Harvester, Bielefeld Academic Search Engine, Elektronische Zeitschriftenbibliothek EZB, Open J-Gate, OCLC WorldCat, Universe Digtial Library , NewJour, Google Scholar