SEA, Climate Change and Hydropower for Sustainability

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Abstract: Azad Jammu & Kashmir, along with mountainous northern Pakistan, possesses a tremendous potential for hydropower production to cater for the energy needs of the entire country. There is no formal SEA being practiced in Pakistan as it is not legally mandatory. The regional and international experiences and lessons on SEA are being assessed to be adopted through two pilot SEA studies to facilitate its legalization under the National Impact Assessment Programme. This is compared with the other option of integrating SEA provisions directly in the environmental law during its formulation/revision. However, Pakistan's vulnerability to climate change, environmental challenges being faced and the state of environmental assessment mechanism compels that a combination of both approaches will be the most suitable to achieve sustainable development.

Introduction

In Pakistan, the cost of environmental degradation to economy was estimated around Rs. 365 billion per year(World Bank, 2006), still a conservative estimate that may have increased currently to Rs. 800-900 billion due to on-going environmental neglect (personal communication). In addition, the cost of adaptation to Climate Change is estimated to be up to $14 billion per year (Aslam, 2011). Socio-economic uplift in the country largely depends on sustainable development that is highly dependent on strategic assessment of its policies, plans and programs. Azad Jammu & Kashmir (AJ&K) is situated in the northern part of Pakistan, a fragile watershed and source of sustained water yield to downstream power and agriculture sustainability. The environmental and climatic challenges were highlighted in Planning Commission of Pakistan's Task Force on Climate Change (GoP 2010) and the National Climate Change Policy of Pakistan (GoP,2013).

2. The total area of AJ&K is 1.33 million hectares as compared to 79.2 million hectares area of Pakistan), with about 4 million population (compared to around 180 million for Pakistan) (GoAJK, 2009). Its size and physical environment (glaciers, forests, biodiversity, fragile watersheds, and several perennial rivers and streams) like northern parts of Khyber Pukhtunkhwa and Gilgit-Baltistan, possesses a tremendous potential for hydropower production to cater for the need of the entire country in the medium and long term perspective in an economically efficient, socially suitable, environment-friendly on sustainable basis. This has become extremely important in the present energy crisis situation in the country.

Strategic Environmental Assessment in Pakistan

3. Strategic Environmental Assessment **(**SEA) is a systematic decision support process, aiming to ensure that environmental and possibly other sustainability aspects are considered effectively in policy, plan and programme making. There is no formal SEA being practiced in Pakistan and neither has it been made legally mandatory yet. The National Conservation Strategy in 1992, the National Environment Action Plan in 2001 and Country Strategic

Environmental Assessment in 2006 are a few examples that assessed the environmental aspects in the country at policy and sectoral levels. Informally, the Medium Term Development Framework (GoP. MTDF 2005-10) was assessed for environmental integration to make it aligned with the National Environment Policy. However, all these efforts/practices were made without legal compulsion. The only SEA carried out in Pakistan was Strategic Environmental, Poverty and Social Assessment (SEPSA) of National Trade Corridor by the World Bank that has highlighted usefulness of the tool (Miglino, 2010).

National Impact Assessment Program

4. The National Impact Assessment Program (NIAP) is being implemented jointly by the Govt. of Pakistan (Planning Commission and Climate Change Division), all the Provincial, Azad Jammu Kashmir (AJK) and Gilgit Baltistan (GB)'s Environmental Protection Agencies and Environment Departments and International Union for the Conservation of Nature Pakistan. The Program is being funded by the Royal Netherland Embassy and is aimed at strengthening the Environmental Impact Assessment (EIA) mechanism and introducing SEA in the country (Khan, 20I1).

Two Approaches for SEA

5. The first approach for effective introduction of SEA in Pakistan is based on piloting it before its legalization. Under this approach, the regional and international experiences and lessons on SEA are being piloted under NIAP to be replicated and adopted in Pakistan. Two pilot SEA studies; one of a Land Use Plan and the other of Hydropower Development Plan of AJK are to be carried out. After completion of these two pilots, and based on the expected success of the same in improving the targeted policies/plans strategically, the legalization of SEA in Pakistan will be initiated/completed as per the designed outputs/outcomes of NIAP. This approach is compared with the second approach i.e integrating SEA provisions directly in the environmental law(s) during its formulation/revision, and improving the required human resources/capacity and institutional mechanism during implementation of these law(s) i.e. learning by doing.

6. Majority of the developed world, and many of the fast developing countries, have adopted SEA as a legal requirement for their development efforts. The regional and developing countries' experiences are good example for Pakistan to follow; being closer to its social, developmental and institutional issues and opportunities. The adoption has been easy in the developed world due to public awareness and demand for environmental protection, capacity to undertake the SEA studies/analysis, political and social will and commitment. On the other hand, in countries like Vietnam, the SEA was adopted through directly incorporating SEA provisions in the Environmental Law, without going through the pilot approach, with the available capacity, institutions and awareness. This approach may not be an ideal one but is

helping Vietnam improve the culture for effective SEA implementation, wherein, human resources/capacity and a conducive institutional mechanism for SEA is improving.

7. Pakistan has a total hydropower potential of about 60000 MW, out of which around 8000 MW potential exists in AJK (GoP. 2002). AJK's rich hydropower potential is still untapped. Besides, the socio-economic benefits likely to accrue include: providing much required power for running the engine of growth; cheap and environment friendly energy; development of infrastructure; protection of remaining forest cover through reduction of pressure for firewood and revenues, control on rapid environmental pollution; promotion of eco-tourism; provide sustainable revenue source and opportunities for additional resources through clean development mechanism.

SEA Pilot of AJK's Hydropower Development Plan

8. The objectives of SEA Pilot of AJK's Hydropower Development Plan, being carried out under NIAP, include assessment of the potential environmental and social risks and benefits; suggest alternative plan options for sustainability; development of an understanding of current state of hydropower planning; and assessment of the institutional and policy constraints, and recommend ways to mainstream environmental and social considerations (Annandale, 2013)

Sustainability: Environmental Integration in Development Planning

9. Environmental assessment mechanism and the environmental governance in Pakistan are gradually improving. It has been made a legal requirement for over fifteen years but, in practice, the things are moving on a slow pace. The planning process and mechanism are quite advanced in Pakistan. However, integration of environment in development planning is a challenge for environmentalist.

10. There are three fronts to fight for environmental integration i,e. creating a culture towards carrying out environmental assessment; improving the quality of these assessments to pave way for quality environmental management plans; and finally, and most importantly, realization of these environmental assessments and the resulting environmental management plans on ground so that the ultimate objective of sustainable development is achieved. The progress on first front is very encouraging, whereas, the quality of assessments is still not very good, though gradually improving. Whereas, implementation of environmental management plans as part of the approved projects has still a long way to go. Awareness and capacity building efforts are underway to create demand for environmental improvement (Personal communication). However, coordination among the environmental protection agencies, planning departments, environmental professionals, consultants and environmental academic institutions is weak (Ayaz, 2013).

Climate Change in Pakistan

11. There is a growing global consensus that climate change is humankind's greatest threat in modern times and is likely to have profound consequences for socio-economic sectors such as health, food production, energy consumption and security and natural

resource management. Pakistan contributes very little to the overall Greenhouse Gas (GHG) emissions, but remains severely impacted by the negative effects of climate change by the increased glacier melt, severe and extreme events like floods, droughts, etc. In the long run, there is a forecast for increased river flows within the next two to three decades; followed by decreased river flows over time as glaciers recede; freshwater availability is also projected to decrease which will lead to biodiversity loss and reduce availability of freshwater; increased intrusion of sea; decreased crop yields, etc. Pakistan's geographical location and socio-economic fragility has made it at the top of the list of countries that are most vulnerable to the environmental, social and economic ramifications of climate change (German Watch, 2011). Lack of resources and capabilities to adapt to the changes will worsen the situation.

12. To promote the culture and effective implementation of SEA at the policy, plan and programme levels, there is a need to combine both the approaches in Pakistan. It is expected that pilot approach will yield some success w.r.t. usefulness of SEA for Hydropower development plan and land use plan, enough to convince the policy/decision makers and planners for improving the targeted policies/plans strategically, thus paving the way for legalization of SEA thereafter. Parallel to this, incorporating SEA's suitable and flexible clauses right away in the Environmental Protection Law(s) (being formulated/revised) with application in the selected sectors of economy will boost its acceptability, efficacy; and capacity development among relevant institutions and a conducive institutional mechanism for SEA.

Discussion

13. Environmental integration in development planning is considered essential for sustainable development in any country. It became more important for Pakistan due to increasing threats of Climate Change impacts on its fragile territories like AJK, more than any other part of the country because of dependence on natural resource base, lack of alternatives and high poverty rate.EIA is useful at the project level and is mandatory under the current applicable laws in Pakistan for all the development projects that have potential for any environmental hazards due to their interventions. In practice, compliance has improved over the last decade; still a lot is to be desired. As far as the quantity/numbers of EIA is concerned, it is encouraging recently. However, its quality is average to poor, in general. Moreover, implementation of environment management plans is still weak, so are the awareness, coordination and capacity of relevant stakeholders. Still, the tool of EIA alone may not be very prudent for environmental integration in an efficient and effective manner. Hence, the addition of SEA as a tool would help in that regard. Environmental degradation is costing around 6% of Pakistan's gross domestic product.

14. Environmental integration at policy, plan, programme and project levels paves way for sustainable development. Hence, adoption of SEA as a tool, parallel to national development planning, is necessary. Majority of the developed countries of the world and many of the fast-developing countries have adopted SEA as legal requirement. This adoption becomes easy if public awareness and demand, capacity of relevant institutions & stakeholders, political and social will and commitment in a society exist. Otherwise, there is a need to pursue a multi-prong strategy, whereby, on the one hand the legal framework and planning mechanism needs to be geared towards SEA and, on the other hand, awareness raising, capacity

building and demand have to be created for the same. In Pakistan, any one approach may not be ideal but a combination of both, i.e. piloting SEA and thereby learning easier and effective ways for its adoption along with provision of legislative framework to enhance SEA implementation process effectively.

Conclusion

15. Considering the potential of hydropower development, an environment friendly and cheaper energy option, gradual improvement of the environmental assessment mechanism, a well established planning process, existence of relevant policies on environment, climate change and national sustainable development strategy (being finalized), it is time to gear-up environmental protection momentum. Sustainable development is much easier through carrying out EIA and SEA both. Planning process (policy, plans and programs) should take the environmental issue into consideration from first point of planning process A Working Group may be established at the federal level, responsible for ensuring SEA process, parallel to the planning process. SEA steps must also involve public from the first draft of SEA report.

16. Pilot SEA of hydropower will certainly improve the general understanding about the process through some concrete outputs and help convince policy and decision makers to pave way for providing legal cover to SEA. However, incorporation of its suitable and flexible clauses during the on-going revision of federal and provincial/territorial Environmental laws under NIAP will further boost SEA's acceptability, efficacy. Provision of legal framework for SEA alone would help to a limited extent and slowly as is the case for EIA. On the other hand, without a legal framework, carrying out SEA of all policies, plans and programmes may take too long and, thus jeopardize the efforts for achieving sustainable development. Thus, any one approach may not be ideal to improve the culture for effective SEA implementation in an improved manner through strengthening assessment mechanism, its understanding, acceptance and ownership by the key stakeholders but a combination of both approaches is the most feasible option for Pakistan.

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