

Editorial

Environmental Assessment in South Asia: Underrepresented in the International academic literature?

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Welcome to this special JEAPM issue on Environmental Assessment (EA) research in South Asia, which besides this introductory paper includes 7 papers contributing to a wider understanding of EA related practices in the South Asian Region (SAR). Some of the papers are country specific while others provide useful overviews of a region and or parts of a region. The collection of the papers is a result of a targeted call to researchers taking a special interest on EA issues within SAR. This special issue is timely considering the challenges and rapid growth this part of the world is currently facing. Furthermore, there is a perception that EA related research in the region is less reported in the academic literature than others. Although, this special issue cannot claim to represent all countries in South Asia, it is a step towards narrowing this perceived gap in the literature and in reporting on the emerging trends of EA within the region. It is hoped that this initiative will encourage further SAR- EA related research and publications in the future.

Keywords: Environmental Assessment; Research; EIA; SEA; South Asia

Motivation for the special issue

Originally from India and with a PhD looking at Environmental Impact Assessment (EIA) Follow-up of Open Cast coal mines in India (Jha-Thakur, 2006), I have always been interested in Environmental Assessment (EA) related issues in the South Asian region (SAR). EA is currently being practiced across the world and in the recent decades with the Asian economy witnessing rapid growth, the role of EA in this continent has gained considerable importance. However, a quick look over the international literature on EA reveals, that much of this attention has been predominantly focused on East Asian countries while SAR countries are relatively speaking under represented. To verify this view I posted a question on ResearchGate community and was pleasantly surprised to see many researchers validating my assumption. The discussions with fellow researchers, wider reading and personal experience further led to reflections as to why this maybe the case?

Disciplinary focus: EA related higher education in Asia and especially within the Indian sub-continent is largely circumscribed within disciplines of engineering and natural science (Fischer et al, 2011; Gazzola and Jha-Thakur, 2009; Sinha, 2008). This is unlike Europe where EA is taught following a multidisciplinary approach (See Fischer and Jha-Thakur, 2013). This focus perhaps influences the way EA related research is being carried out or disseminated. It is therefore possible that much of the related research is reported in journals which are more natural science oriented. Furthermore, the engineering and technical focus with which EA is taught in these countries also implies that EA related research maybe reported alongside environmental modelling and management studies and therefore is less reported in the journals predominantly dedicated for EA.

EA related research relatively less matured: Though EA practices have been carried out within SAR for decades, EA related higher education in these countries is relatively less matured. For example in India, until recently environmental education was seen as ineffective and the 2006 National Environmental Policy highlighted the need to introduce environmental content within formal education (Government of India, 2006). This initiated environment related degrees which were included through technical education. Examples include BTech (Bachelor in Technology) and MTech (Master in Technology) in environmental engineering; MSc and PhD in environmental science; and MSc in natural resources (Sankarankutty 2007; TERI 2007). This late introduction implies that researchers working in this emerging field are relatively new and perhaps it can be expected that the research outputs will gain momentum in the future.

EA research and education is less attractive: The countries within the SAR consist of developing and emerging economies, hence rapid development is of key priority. Under such circumstances conventional fields such as engineering, medicine and law are usually seen as being more attractive for students and the research community in general as they are perceived to be lucrative and promising grounds for careers. Environment as such is still low key area and perhaps therefore is not yet attracting the best of the lot (Jha-Thakur, 2011). This may further undermine the quality of research and hence the lack of outputs in international journals. Furthermore, EA related research may be initiated in specific sectors like mining and hydropower and may be targeted in journals meant specifically for these sectors.

East Asian vs South Asian publications on EA: Some of the points made above hold true for East Asian as well as South Asian countries. Nevertheless, the general feeling is that probably East Asia is better represented in the EA related academic literature. To test this out a quick preview of Environmental Impact Assessment Review (EIA Review) was carried out. EIA Review is a popular

journal with EA as its main focus. Hence the intention was to scan through the last five years of publications (2011-2015) to get a flavour of the dominance of East Asian vs South Asian publications. The results were very decisive in this case. From 2011 to 2015, 26 articles were identified which have been published in EIA review representing East Asia. This includes China (17), Taiwan (1), Vietnam (2), Thailand (1), Korea (1), China and trans-boundary cases (2). These papers focussed on EA only. In contrast only 4 articles were identified from SAR out which India was represented in 2 articles, Pakistan (1) and Maldives (1). It should be noted however that a special issue on China was published in EIA review in 2011 (along with the 2010 issue 11-4 of JEAPM). If all articles from East Asia including the ones not directly within the remit of EA is included, the difference is further skewed towards East Asia with the total number of articles being published amounting to 34 in the last 5 years, represented by 9 countries. The number of articles from South Asia remained the same. Though this method represents a cursory view to the publications from the two regions it is indicative that the assumption can be validated to some extent. Further research is needed to explore EA related issues and research in the two regions and possible causes of disparity if any.

Current Issues in South Asia

The need to focus on South Asia is further enhanced by the regions' development trends. South Asia is witnessing massive developmental activities, including construction of hydroelectric dams, fossil fuel production, and massive urbanization which involves plans for hundreds of smart cities along with construction of several infrastructure projects. In addition to this, South Asia has experienced several natural disasters since 2004-05. To name a few the region has had to cope with the 2004 tsunami, earthquake in Himalayan range (2005) and Pakistan (2008) followed by recent floods in Uttarakhand in India (TheIndainEconomist, 2013). These recurring natural disasters have highlighted the urgency and need for careful considerations of environmental issues in the decision-making process. Some of the trends that are particularly prevalent in the region and set the context for this special issue are discussed below:

Energy Deficit: South Asia is currently facing an acute energy deficit which can severely undermine its growth strategy. The percentages of population who have access to electricity are 41% in Bangladesh, 66.3% in India, 43.6% in Nepal and 66.24% in Pakistan (Khadka, 2012). It is further suggested that the solution may lie in pooling together the resources of the region through a cross-border network. However, South Asia is also a region which severely lacks in regional integration. Hence, the region faces challenges as to how it can overcome the political sensitivities in adopting a regional approach. The issue of transboundary EA has been explored in two of our special issue

papers (Marsden, 2016; King and Smith, 2016) which highlight how the EA trend in the region may emerge in partly solving this problem.

Infrastructure Projects: The energy deficit in the region is also leading to wider implications for developing infrastructural projects, especially hydro-power projects which are likely to have major impacts on the environment. Within this context, Nepal has a huge potential role to play as with regards to inland water resources it is world's second richest country consisting of 6000 rivers, rivulets and tributaries (IFC, 2016). As far as India is concerned, most of these projects are located in the Himalayan range which are eco-sensitive and bio-diversity hotspots (Nautiyal et al, 2011). Hence, strategic and cumulative assessments are needed to guide such developments and also enhance stakeholder participation. Representing these issues two papers of this special issue are dedicated in exploring the role of EA within the context of hydro power projects in Nepal and India (See King and Smith 2016; Diduck and Sinclair 2016) while Turaga (2016) evaluates how EIA policy is formulated and explores stakeholder engagement within this process.

Natural Disasters: While Asia is the most disaster prone region of the world, poverty further makes the SAR particularly susceptible to natural disasters. Based on Human Development Index, India, Bangladesh, Nepal, Bhutan, Pakistan and Sri Lanka are ranked at 127, 139, 136, 134, 135 and 93 respectively. Furthermore, rural areas of India, Bangladesh and Pakistan are affected by widespread poverty (Memon, 2012). Climate change further poses severe challenges in the region which has manifested itself through disasters like floods, earthquakes, draught and tsunamis. Therefore, disaster management and risk assessment within the region is in need of policy intervention. EA and Disaster management has been emerging as a specialist topic within environmental assessment literature (see JEAPM special issue December 2014). In this special issue, Abenayake et al (2016) explore community resilience assessment and the need to tailor imported assessment methods to localised contexts in Sri Lanka.

Experimental EA at policy stage: Although EIA practices have been prevalent in the SAR since the 1980s (Jha-Thakur et al, 2009), strategic level assessments are still embryonic and experimental within the region. Due to the nature of transboundary issues and cumulative impacts of the infrastructure projects as discussed above, it is becoming increasingly important to develop EA above the project level within this part of the world. Furthermore, international agreements and initiatives like the Pakistan-China economic corridor (Notezi, 2016), UNEP regional seas programme for South Asia (UNEP, 2016) and the investments by the Asian Infrastructure Investment Bank (AIIB, 2016) make SEA's role imperative in the future of SAR. In this issue a consolidated view of SEA

uptake has been presented by Saxena et al (2016). Furthermore, Mukherjee and Rajvanshi (2016) shed light to the role that SEA can play in providing a regional vision to land use plans in India.

The Papers

In this special issue out of the remaining seven papers we have three papers focussing on India, one on Nepal, one on Sri Lanka, one on China and the Third Pole while one consolidates Strategic Environmental Assessment (SEA) practice in South Asia. In the first paper the authors Akanksha Saxena, Asha Rajvanshi and Vinod Mathur (all from Wildlife Institute of India) give us a much needed overview of SEA practices across South Asia. The paper reflects on changing trends of SEA uptake in South Asia and identifies voluntary practice and donor driven impact assessments as drivers for accelerating SEA uptake. They go on to providing numerous examples of SEA and SEA-like instruments in the region. However, the authors further conclude that the planning context along with lack of legislation and political will amidst the drive for rapid economic growth undermines the uptake of SEA in the region.

Next, Hugh King and Laurence Smith from School of Oriental and African Studies (SOAS) UK, give us an account of the value of using SEA for the scattered and diverse impacts of hydropower development in South Asia's Koshi basin which is in Nepal. In doing so, the paper also touches upon cross-boundary issues with India. The authors explore the potential of SEA while investigating perception towards it through stakeholder interviews and documentary analysis. The results indicate that policy documents fall short of best practice in all areas of SEA practice while interview results suggest that the EIA practices are not up to the mark in terms of quality and influencing decision-making. The authors eventually develop a contextual framework for SEA implementation in the Koshi basin and recommend three moves: a) identify a lead agency in Nepal; b) conduct focussed SEA and c) pilot transboundary work.

Continuing with the SEA theme in South Asia, Debjyoti Mukherjee along with Asha Rajvanshi (both from Wildlife Institute of India) recognise the role that SEA can play in reducing negative environmental effects and enhancing the positive impacts associated with the implementation of land use plans. In this paper they look at the usefulness of applying SEA to land use planning process in India and take the case of the Gurgaon-Manesar Development Plan for 2031. As the plan was already drafted at the time of assessment, SEA was carried out as a separate single opportunity model, aimed at conducting the environmental review of the already prepared draft plan. The experience suggests that SEA conducted along with plan formulation would have yielded better

results. Nevertheless the exercise reveals several contradictions to the plans which would not have surfaced out without the regional vision that SEA provided.

In the next paper, Simon Marsden from Flinders University, Australia looks at transboundary Environmental Impact Assessment (EIA) in the third pole, which comprises of the Tibetan Plateau and associated mountain ranges in the northern part of South Asia. In doing so, he critically examines the role of China's regulatory framework for environmental assessment. The third pole is relatively less developed till date but a series of events including political relations of India, China and Pakistan and the financial support by the AIIB to export Chinese development to other countries in the sub-region has huge implications in terms of infrastructural developmental activities. Furthermore, these may lead to considerable pressure on the environment. The author therefore examines transboundary EIA within the third pole context and especially looks into the potential role that the ESPOO convention may play.

In our fifth paper Alan Paul Diduck (The University of Winnipeg) and John Sinclair (University of Manitoba) examine the approval process of small hydro power in the northern Indian states of Uttarakhand and Himachal Pradesh. The authors use three case studies which reveal interesting insights especially with regards to the perceptions of the stakeholders affected. The stakeholders' involvement differed amongst the three studies along with their diverse concerns with regards to the small hydro projects. It was evident through the findings that the practice falls short of the expectations. Furthermore, it was concluded that even preliminary discussions with affected parties could reveal important issues that should be taken into account by proponents. The article emphasises the growing importance of hydro power in the region and advocates periodic state sponsored and region or catchment based cumulative affect assessment to take into account negative synergistic effects of these projects and optimise the benefits for local people.

The sixth paper focuses on Sri Lanka and Abenayake, Mikami Yoshiki, Ashu Marasinghe, Yukawa Takashi and Iwahashi Masahiro (all from Nagaoka University of Technology) especially look into 'community resilience' which is a vital consideration in national development in most South Asian countries. In doing so, the authors investigate community resilience assessment methods that are imported i.e. have been developed and validated in foreign countries. The authors term these methods as 'extra-local methods'. They investigate the implications of using three assessment methods on case studies that are affected by climate-related disasters to various degrees. However, results indicated that the three assessment methods don't reveal community resilience levels of sufficient consistency/concordance as expected and therefore affect decision-making differently.

Hence the authors conclude that in relation to South-Asian countries which have unique cultural-geographical setting and are subject to considerable variations and extremities of climate related disasters, tailoring of the practice of extra-local assessment methods to local context is essential without which it could cause failures in decision-making.

Finally, in our last paper, the focus is back again on India where the author Rama Mohana Turaga from the Indian Institute of Management Ahmedabad (IIMA) explores the EIA policy formulation stage to identify larger debates regarding the trade-offs between economic growth and environmental protection. In doing so, the author especially investigates the case of the 2009 Amendments to EIA Notification, 2006. The study reveals that the imbalance in power in favour of the project proponents which is evident at post-decision level, appears to exist at the policy formulation stage as well. Secondly, the environmental groups do exert some influence on the EIA policy formulation and finally based on this one case study it seems that there is a feedback cycle through which the environmentalists and projects proponents learn, however the Government appears to be an impassive actor.

Conclusions

The papers covered in this special issue give us a flavour of some of the important trends in the region. The importance of EA at the strategic level is clearly recognised. SEA uptake is increasing but at a slow rate. However, considering the growth trends and issues faced in the region, EA is likely to play a critical role both at project and above project level. SEA and SEA-like instruments are being practiced and encouraged by voluntary practices and donor driven assessments. Nevertheless, the drive for rapid development has kept SEA from being introduced formally. The development trends are emerging at cross boundary level and at large scales. Lack of cumulative and synergistic EA is already causing losses that are proving to be dear. There is clearly a need for EA to take stage in partly providing sustainable solutions for the emerging trends of development in SAR and facilitating stakeholder engagement. Its role goes beyond assessment to risk assessment and disaster management. However, political will, lack of regional co-operation and drive for development has kept EA practise somewhat withheld from its truest potential.

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