

## **Support Networks amongst SAARC and Other Littoral States of the Indian Ocean**

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**Abstract:** *Most SAARC countries are near the Indian Ocean and are dependent on its resources for Trade, fishing, agriculture and Tourism. Their climate and weather patterns are affected by the Monsoons which originate over the ocean mass and move on to land and back annually. Besides Global Warming and heavy rainfall there are dangers to life and business through floods, Tsunamis and cyclones. Suitable warning systems which are coordinated can give member states advance notification of any impending disasters originating in the ocean areas. Another area of cooperation is in the Renewable energy field. Wind, solar and tidal energy networks can use the ocean as a storehouse of energy. Island countries like Seychelles, Mauritius, can also come into the ambit of such ocean based networks which can be useful for Meteorology, Trade, Fisheries and Energy.*

**Keywords:** *Productivity, GNP, Per capita income, DRM*

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### **I. Introduction:**

The SAARC framework was established in 1985 in Dhaka with the signing of a declaration amongst the member states. A common cultural heritage along with diverse socio economic features characterized the members. The primary objective at the time was to accelerate socio economic development. At present the agenda includes poverty alleviation, people to people contact, HRD, and legal agreements with international bodies.

The mechanism put into place was primarily to address socio economic development and alleviate and improve the lot of the respective populations compared to the more developed nations. Other problems faced by the member countries arise due to poverty, disease, unemployment, low income, and natural disasters.

The natural disasters are due to the proximity of these countries to the Himalayan massif and the Indian Ocean. The proximity creates the phenomenon of the monsoons with attendant floods, crop failure due to irregular weather and earthquakes due to the tectonic movements of plates in the Himalayan regions. The past decade or two has seen several of these phenomena such as the tsunami of 2004, earthquakes in Pakistan, Nepal and India, and various cyclonic storms in the Indian ocean and Bay of Bengal.

Global warming has also begun to be noticed and the recently concluded Summit of countries has put a ceiling of 2 degrees as the upper limit for temperature rise over the next few decades. For several low lying island nations like Maldives, Kiribati in the Pacific, and coastal towns in the area, even 2 degrees may be too much. Plans are underway to purchase land in other countries and shift the population en masse to plan for this possibility.

Little attempt was made at the time to anticipate disasters. After the tsunami a Disaster management centre SADMIC was set up in N Delhi, with the aims of creating awareness, formulating policy, cooperation, standards guidelines and tools to tackle disasters. The aims are sufficiently vague, yet to this day no SAARC network appears to be in place to coordinate efforts for a disaster. In the recent Nepal earthquake, most of the assistance came from NGO's and volunteers, apart from International donors.

Climate change is the Definitive challenge for the 21<sup>st</sup> century. Perspectives of various SAARC members are described in the conference proceedings of KAS and CSAS , ( Delinic Pandey 2012).

### **Background In Cultural And Historical Contexts:**

SAARC countries face natural hazards, including earthquakes, cyclones, tsunamis, floods, landslides, sea rise, and late monsoons causing droughts. In recent times, urbanization, environmental and climate change have increased exposure to these hazards, resulting in more frequent and more intense natural disasters. For Nepal and Bhutan, landslides, floods, and earthquakes are the primary risks. For countries with large coastal regions, such as India, Bangladesh, Sri Lanka and the Maldives, cyclones and tsunamis also pose serious threats to life and livelihoods. The subcontinent currently includes the five "mega-cities" of Mumbai, New Delhi, Dhaka, Kolkata and Karachi, which, by their very nature, are at increased exposure to natural disasters.

Afghanistan, Bangladesh, Bhutan, and Nepal - are in the Least Developed Countries (LDC) category. Maldives "graduated" from the LDC status in 2011. On the flip side, India, Pakistan and Sri Lanka have very strong economies and highly developed military assets to match.

Also exceptional to South Asia, melting glaciers in the Himalayas pose substantial risks. As these glaciers recede, downstream countries face threats from glacial lake outbursts, (GLOFs), and other flash floods. Dudh- Koshi in Nepal and Pho Chu in Bhutan are such danger spots. The sub-region may soon be deprived of water resources as glaciers recede in the near future, due to global warming.

Cultural affinities and shared geophysical conditions within Asia-Pacific are positive attributes for applied DRM activities, in such critical areas as river basins, tropical cyclone zones, or active seismic locations. It was only after 350,000 deaths from the 2004 Indian Ocean Tsunami that the value of a regional Indian Ocean tsunami warning system was understood and installed by international organizations and direct beneficiary countries. [Disaster Risk Management in Asia and the Pacific Issues Paper April 2013 A Joint Study of the Asian Development Bank and the Asian Development Bank Institute]. DRM was explicitly included in the SAARC charter, following the 2004 Tsunami, and aligned with the Hyogo Framework (2005-2015). Priorities included: development of Risk reduction strategies, regional response mechanisms, regional national information sharing, Disaster management training, education, research, Information and communication technology (ICT) development, and effective monitoring and evaluation mechanisms.

**Multiple disasters:** According to Kawata (2011), compound disasters are multiple sequential disaster events producing “more serious damage than individual disasters occurring independently.”. Kawata also equates compound disasters with catastrophic disasters, defined by the number of casualties, the large area of damage, and multiple spawned secondary disasters. The increase in occurrence of multiple large disasters is an inevitable consequence of increases in the population and spatial density. The definition closely draws on the Great East Japan Earthquake of March 2011 and includes a Tokyo metropolitan earthquake scenario as a catalyst. (Kawata, Y. 2011. “Downfall of Tokyo due to devastating compound disaster”. *Journal of Disaster Research* 6 (2): 176–184)

Addressing disaster risk, and integrating climate change adaptation (CCA) into today’s planning decisions has now become standard government policy in several countries in the Asia and Pacific region (Anbumozhi 2012). In 2011, 80% of global disaster-related economic losses occurred in the Asia and Pacific region. Immense losses were incurred to property and life. A conservative estimate of the average annual direct economic damage due to disasters in countries of Asia and the Pacific in the period 2001–2011 was US\$60 billion.(UNESCAPdatabase:<http://www.unescap.org/stat/data/statdb/DataExplorer.aspx>)

**TABLE: Natural disaster levels in SAARC countries From EM-DAT database:**  
<http://www.emdat.be/advanced-search>

	Afghanistan	Bangladesh	Bhutan	India	Maldives	Nepal	Pakistan	Sri Lanka	Total
Drought	1	0	0	0	0	0	0	0	1
Earthquake	34	0	1	27	1	45	13	0	121
Epidemic	0	0	0	0	1	0	0	1	2
Extreme temperature	0	2	0	2	0	2	0	0	6
Flood	2	1	0	7	0	2	1	3	16
Avalanche	2	0	0	0	0	3	3	0	8
Landslide	3	25	1	32	0	63	7	0	131
Storm	1	1	0	3	0	0	0	1	6
<b>Total</b>	<b>43</b>	<b>29</b>	<b>2</b>	<b>71</b>	<b>2</b>	<b>115</b>	<b>24</b>	<b>5</b>	<b>291</b>

**Best Management Practices**

**Road Maps**

Over the period 2008 to 2012, SDMC developed a number of “road maps” on different aspects of disaster management. The participatory process involved member state representatives and experts in relevant DRM fields. SDMC was supported by some donors including ISDR, USAID (for ICS trainings) and JICA. SDMC developed ten road maps which are available online. These include:

- Community based disaster risk management in South Asia (2008);
- Application of Science and Technology for Disaster Risk Reduction and Management (2008);
- Coastal and Marine Risk Mitigation Plan (2008);
- Integration of Disaster Risk Reduction and Climate Change Adaptation in South Asia (2008);
- Mainstreaming Disaster Reduction in Development in South Asia (2008);
- Earthquake Risk Management in South Asia (2009);
- Landslide Risk Management in South Asia (2010);
- Urban Risk Management in South Asia (2010);

□ Drought Risk Management in South Asia (2010);

(Md.Kalequzzam)

([http://www.sdnbd.org/sdi/issues/floods\\_drainage/2004/disaster\\_management/flood\\_control\\_through\\_best\\_management\\_practices.htm](http://www.sdnbd.org/sdi/issues/floods_drainage/2004/disaster_management/flood_control_through_best_management_practices.htm))

Solutions to flooding problems require an understanding of the long-term factors that contribute to increased floods.: Unplanned urbanization, soil erosion, local relative sea-level rise, inadequate sediment accumulation, subsidence and compaction of land, riverbed aggradation, and deforestation. To mitigate flooding propensity in Bangladesh, both the government and people will have to adopt watershed scale best management practices (BMPs) – a series of activities designed to: (a) reduce the run-off, (b) increase the carrying capacity of drainage system, and (c) increase land elevations.

Proposed BMPs are: floodplain zoning, planned urbanization, restoration of abundant channels, dredging of rivers and streams, increased elevations of roads and village platforms, building of efficient storm sewer systems, establishment of buffer zones along rivers, conservation tillage, controlled runoff near construction sites, adjustment of life-style and crop patterns, good governance, and improvement on flood warning/preparedness systems.

In addition the socioeconomic problems cannot be separated from the technological ones. The issues of Water stress, Nutritional hunger, and Poverty must also be tackled. (See TABLE List of BMP's ( From Kalequzzam))

In order to properly assess the BMP's, one must perforce view them in the context of and relevance to Ocean based BMP's and DRM technologies and Practices.

A recent paper has reviewed the Management in corporate scenarios among the SAARC countries. Specifically it has looked at the issue of gender amongst shareholders and Board members of Corporations,(Sulphey Nisa 2014). Only India and Pakistan have women executives and apparently in Maldives, women face no discrimination at all. In Sri Lanka a code of Best Governance has been drawn up by the Institute of Chartered Accountants. The Global gender Gap report (2013) lists Maldives and Sri Lanka together. Analysis of women participation in Boards of SAARC countries lists 5.3% in India and 22% in Pakistan, according to BSE100 and KSE100 estimates. Another human rights problem is that of human trafficking, which is perhaps a result of the human tragedies resulting in displacement and upheaval following natural disasters in the SAARC region ( Bashiruddin 2014)

#### **Ocean Based Technology:**

A point missing in the SAARC framework is the realization that most of the members are littoral states and are dependent on the ocean for trade, transport and fishing, apart from being influenced by weather patterns like the monsoons.

#### **Mountain Disaster And Earthquakes:**

The countries of Nepal, Bhutan, Pakistan, Afghanistan, India all share borders with the Himalayas which are continually experiencing the plate shifts of the Indian massif.

In Nepal, Management of disaster relief is hampered by lack of a National Disaster Act, along with interference from NGO's who do not seem to be of help in the Governments efforts. Apart from this the Nepalese have had internal dissent and civil war with Maoist rebels, White (2015).

#### **Renewable Energy:**

An area of Technology development which is beneficial to all SAARC countries is the Energy development sector. Many regions in Nepal, Bhutan Afghanistan are without regular power. The power of nature can be harnessed using proper engineering technologies, for example in tapping hydropower from glacial lakes, torrential streams, wind, tidal and solar power. In view of the low technology base of several of the member nations, collaboration with Multinationals may be advantageous in leapfrogging technologies to attain global standards.

#### **Other Areas of Engagement**

SDMC has also explored the possibility of setting up a catastrophe risk insurance scheme similar to that operating in the Caribbean and the Pacific Islands regions although it has chosen not to develop one of its own at this time. Development of a Regional Recovery Framework for SAARC and a standby capacity for recovery planning assistance are currently being examined.

SAARC countries have signed an Action Plan on Climate Change that recommends cooperation on climate risk modeling, sharing information, particularly meteorological data, and capacity building in early forecasting and warning and adaptation measures. India announced at the SAARC Summit in November 2014 that it would launch a SAARC satellite to enhance regional cooperation in space technology. The SAARC satellite is envisioned to address regional telecommunications and disaster management needs as well

**TABLE : SAARC Programmes and Coordinators**

<b>NRRC Flagship Programmes Flagship</b>	<b>Leads/Coordinators</b>
<b>01.</b> School and Hospital Safety	Min of Education/Min of Health/ADB/WHO
<b>02.</b> Emergency Preparedness and Response Capacity	MoHA/Red Cross (formerly it was OCHA that co-led)
<b>03.</b> Flood Management in the Koshi River Basin	Min of Irrigation/World Bank
<b>04.</b> Integrated Community Disaster Risk Management	Min of Local Development; Red Cross/IFRC
<b>05.</b> Policy/Institutional Support for Disaster Risk Management	MoHA/UNDP

**Current status of DRM in Nepal**

In the absence of an updated Disaster Act, Nepal has taken a predominantly reactive approach to disaster risk rather than an option of proactive preparedness and risk reduction. There is evidently no lack of resources or technical advice to move the DRM agenda forward in Nepal. Instead, the complete lack of progress in DRM is generally viewed to be a political problem. International donors are said to be part of the predicament, tiptoeing around government ministries who do not perform effectively rather than demanding meaningful action against the inertia and entrenched political corruption that is in the way.

There will never be adequate institutional structures, trained human resources, integrated planning, and realistic budgets for DRM without a state-of-the-art National Disaster Act in the country. Nation-wide legislation to allow for the election of local officials and for the provision of resources to implement the range of DRM activities is necessary to build sustainable resilience in Nepal.

In case of Flood Management, factors include: unplanned urbanization, soil erosion, local relative sea-level rise, inadequate sediment accumulation, subsidence and compaction of land, riverbed aggradations, and deforestation. To mitigate flooding effects in Bangladesh, both the government and people need to adopt watershed scale best management practices (BMPs) – a series of activities designed to: (a) reduce the run-off, (b) increase the carrying capacity of drainage system, and (c) increase land elevations.

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In this regard, different managerial methods are in vogue amongst various countries in the Asian region: Japan focuses more on monitoring rather than incentives and people management. In the Japanese system, collective management work in the factories is the norm, and is apparently a feature from Asian cultural “collectivist” tendencies and the lack of capital following World War 2. This may have compelled Japan to go in for Lean Manufacturing and Production techniques. As a result there is no accepted “good” or any corresponding “bad” practice. The approach is more in line of Contingency Management.

According to the Harvard Study (2011), BMP depends on the country and Region. Multinationals score highest because they adopt the culture of the country they work in and apply management standards and techniques acquired by experience. Most American firms now use Lean manufacturing techniques picked up from Japan. Brazil and India, classed as developing nations have a tail of badly performing companies in the statistical spread of scores, deviating from the bell shaped normal curve. Several multinationals have operations in more than one SAARC country and it may be possible to develop working relationships with them and the SAARC nations to promote cooperation with more effective managements and logistic support, especially in the Energy and Health care fields.

**II. Conclusion**

Further thought must be given in providing Insurance and risk financing at the micro level, which would help in generating income and savings for many people at the grass roots level, and also those below the poverty line which is a very common problem in Asia. Very few of the studies reviewed mention this aspect, and it is worth looking at from the micro economic and perhaps national levels. Employment generation and Poverty reduction has been coupled with “Low Productivity Employment” and “Nutritional Poverty”, leading to effects on GDP, Bhalla (2006).

Suggestions have also been given in Delinic (2011) in the areas of a Free Trade Zone, liberalization and looking towards the East, despite statements of commitment to intra member trade which appears negligible (the

exception being India). The current view from the West in at least one publication (White 2015) is that SAARC is not doing enough - being merely a forum to meet and exchange views, shaking hands occasionally. Elsewhere, SAARC nations engage in various inter regional conflicts and hence real cooperation has started occurring only after disastrous natural calamities with the establishment of DRM schemes. One must not keep waiting for the next disaster, however



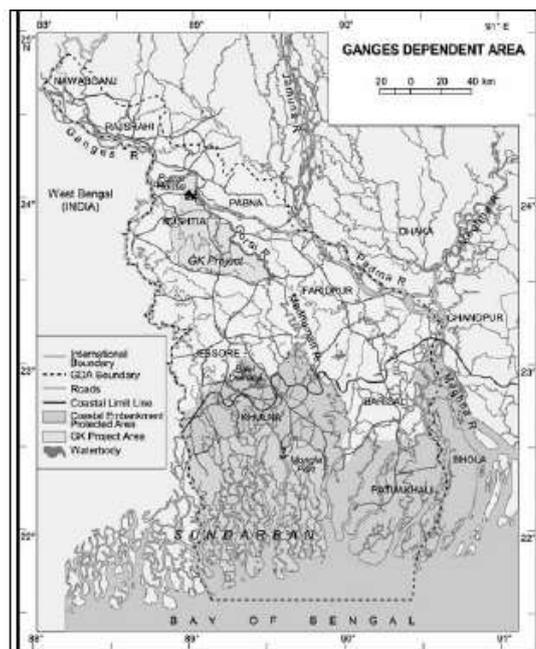
Notes: Weekly average total factor productivity for the 14 treatment plants which adopted modern management practices for quality, inventory and production efficiency and the 6 control plants. All plants make cotton fabric near Mumbai, India, with between 100 and 1000 employees. Values normalized so both series have an average of 100 prior to the start of the intervention.

FIGURE: Productivity improvements following BMP's (From HBS Working paper 12-052, 2011)

Table 3. List of BMPs and their effects on mitigation of flooding.

BMPs	Expected effects on mitigation of flooding
Dredging rivers and streams	Increase carrying capacity of drainage
Re-excavation of abandoned channels, ponds, and lakes	Increase carrying capacity of drainage; reduce run-off
Dispersal of dredged/excavated sediments on land	Increase elevations of earthen roads and village platforms
Conservation tillage	Reduce soil erosion and run-off
Establishment of vegetated buffer zone along rivers and streams	Reduce soil erosion, run-off, and bank erosion
Silt fence around construction sites	Reduce soil erosion and run-off
Sediment and run-off detention ponds in construction sites	Reduce soil erosion and run-off
Removal of coastal polders	Increase land elevations by tidal inundation
Efficient storm sewer system in cities	Increasing carrying capacity and reduce water-logging in cities
Planned urbanization and compact township	Reduce impervious surface and run-off
Watershed-scale landuse planning	Reduce run-off, soil erosion, and impervious surface; sustainable economic developments
Reforestation programs	Reduce run-off and soil erosion
Good governance, self-reliance, and implementation of environmental acts	Implementation of BMPs to mitigate flooding problems; sustainability in economy and environment
Integrated regional water resources development plan for Ganges-Brahmaputra-Meghna Basin in Indian Subcontinent	Flood/drought control; optimal uses of natural resources in the region; sustainable environment and development

TABLE of BMP's ( from Md Khalequzaamn)



Map-1: Ganges Dependent Areas (GDA) inside Bangladesh  
Source: Banglapedia, 2008.

FIGURE: Map of Ganges and Brahmaputra delta, Bay of Bengal Bangladesh

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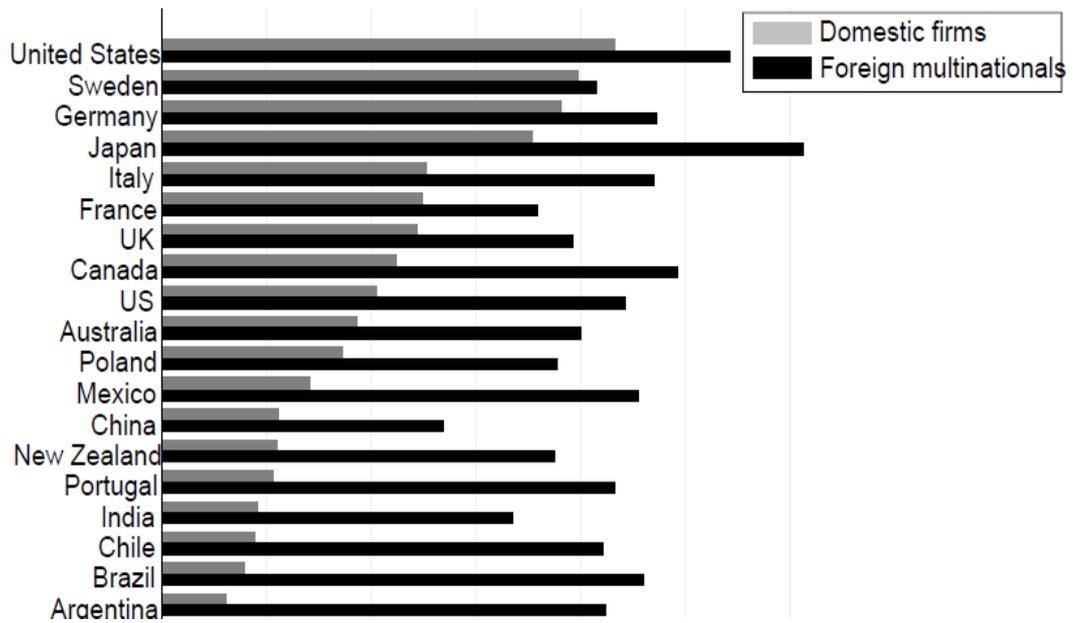


FIGURE: distribution of local and foreign firms in various countries (World Bank indices for different countries, (From “Management Practices across firms and countries”, Bloom N et al, Harvard Business School, Working paper 12-052, Dec 19 2011)



Note: 4930 observations from manufacturing in total.

Figure : distribution of well managed firms in different countries (From HBS working paper 12-052, 2011)

Table 1: The Management Practice Dimensions

Categories	Score from 1-5 based on:
1) Introduction of Modern manufacturing techniques	What aspects of manufacturing have been formally introduced, including just-in-time delivery from suppliers, automation, flexible manpower, support systems, attitudes and behavior?
2) Rationale for introduction of Modern manufacturing techniques	Were modern manufacturing techniques adopted just because others were using them, or are they linked to meeting business objectives like reducing costs and improving quality?
3) Process problem documentation	Are process improvements made only when problems arise, or are they actively sought out for continuous improvement as part of a normal business processes?
4) Performance tracking	Is tracking ad hoc and incomplete, or is performance continually tracked and communicated to all staff?
5) Performance review	Is performance reviewed infrequently and only on a success/failure scale, or is performance reviewed continually with an expectation of continuous improvement?
6) Performance dialogue	In review/performance conversations, to what extent is the purpose, data, agenda, and follow-up steps (like coaching) clear to all parties?
7) Consequence management	To what extent does failure to achieve agreed objectives carry consequences, which can include retraining or reassignment to other jobs?
8) Target balance	Are the goals exclusively financial, or is there a balance of financial and non-financial targets?
9) Target interconnection	Are goals based on accounting value, or are they based on shareholder value in a way that works through business units and ultimately is connected to individual performance expectations?
10) Target time horizon	Does top management focus mainly on the short term, or does it visualize short-term targets as a "staircase" toward the main focus on long-term goals?
11) Targets are stretching	Are goals too easy to achieve, especially for some "sacred cows" areas of the firm, or are goals demanding but attainable for all parts of the firm?
12) Performance clarity	Are performance measures ill-defined, poorly understood, and private, or are they well-defined, clearly communicated, and made public?
13) Managing human capital	To what extent are senior managers evaluated and held accountable for attracting, retaining, and developing talent throughout the organization?
14) Rewarding high-performance	To what extent are people in the firm rewarded equally irrespective of performance level, or is performance clearly related to accountability and rewards?
15) Removing poor performers	Are poor performers rarely removed, or are they retrained and/or moved into different roles or out of the company as soon as the weakness is identified?
16) Promoting high performers	Are people promoted mainly on the basis of tenure, or does the firm actively identify, develop and promote its top performers?
17) Attracting human capital	Do competitors offer stronger reasons for talented people to join their companies, or does a firm provide a wide range of reasons to encourage talented people to join?
18) Retaining human capital	Does the firm do relatively little to retain top talent, or do whatever it takes to retain top talent when they look likely to leave?

Note: Full set of questions that are asked to score each dimension are included in Bloom and Van Reenen (2007), and also on [www.worldmanagementsurvey.com](http://www.worldmanagementsurvey.com)