Science Behind Traditional Knowledge for Disaster Risk Reduction, Climate Change Adaptation and Food Security

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A Multidisciplinary Project to Evaluate Traditional & Local Knowledge used by the People of GBM Basin to Manage Resources for

- Conserving Biodiversity
- Managing Landscape
- Home-centered Waste Recycling
- Grey Water Use
- Combating Climate Change Effects
- Disaster Risk Reduction
- Youth Engagement
- Healthy Lifestyle &
- Food Security
Very Fertile Land with 165 million people on 147,540 km² area only
Bangladesh receives water with huge organic matters from 1,721,300 km² Catchment Area of GBM River Systems
People of Bangladesh Used Traditional Practices on

- Resource Management
- Farming & Cropping Culture
- Waste Recycling, Surface & Grey Water Use, Health & Nutrition
- Uses of Medicinal Plants & Animal Extracts
- Traditional Defense Mechanisms Against Natural & Climate Extreme Disasters
- Choosing the Right Crops & Other Agricultural Practices etc.
Compilation of Traditional Wisdoms

- Many Traditional Wisdoms & Practices were Recorded by Khona in 9th Century, Known as "Khonar Bachan"
- A Part of it Collected by Dr Dinesh Chandra Sen & Compiled in "Maimansingha Gitika" (1923)
- Purbababga Gitika (1926) by Dr DC Sen
- Some are Social Ritual & Folklore
- Some are Religious Culture.
Project Conceptualization

- Multidisciplinary Project Conceptualized to Reflect on the Importance of the Traditional Knowledge on Social, Economical & Environmental Sustainability towards Climate Change Adaptation, DRR & Food Security
- Project has been Accelerated & Encouraged by Colleagues of United Nations University (UNU-IAS)
- Support from the IUBAT University & APN Global Change Research Program
Project Scope and Outcome

- Investigation of the scientific values of the traditional knowledge in the light of Education for Sustainable Development to contribute to solution of manifold problems like Climate Extremes, Disasters, Global Warming & Food security etc.

- Project outcome is expected to create confidence on the scientific values of the traditions by improving the scientific & technical capabilities of the local, national & regional vulnerable groups.
IUBAT University & RCE Greater Dhaka received National Environmental Award from Government of Bangladesh in World Environment Day 2014 for its outstanding contribution in Research & Awareness with this program “Science behind Tradition” under the theme: *Raise Your Voice, Not the Sea Level*. 
Publications

❖ **A: Presented and Published**


❖ **Traditional Practices For Solid Waste Recycling In Rural Homes —A Lesson for Education for Sustainable Development** Presented in the International Symposium on “A Decade of Regional Centres of Expertise on ESD: Reflections and Advances in Asia-Pacific”, 7th Asia Pacific RCE Regional Conference held at University Seines Malaysia, Penang, Malaysia from 25-29th August 2014

❖ **Superiority of Organic Agriculture over Conventional Agriculture**
Presented in the International WWOOF Conference held on 17-20 October 2014 at Fethiye, Turkey
B: Being Published

- Climate Extremes and Challenges to Infrastructure Development in Coastal Cities in Bangladesh WACE-D-13-00082
- Impacts of Floods on Forest Trees and their Coping Strategies in Bangladesh WACE-D-13-00078
C: Proposals Accepted and Submitted


- Project proposal to APN under 2014 CAPaBLE Call on Capacity Building for Sustainable Landscape Management in Bangladesh
Landscape: Undulation and Traditional Flood-Plain Management

Undulation is the Beauty of Nature
Keeps all the Systems Running

Digging Pond for Raising Land for Homes
CC, DRR, BD

Exotic Varieties Damaging Ecosystems

Lack of Knowledge of Habitat Science

- No undergrowth
- Don’t initiate rainfall or condensation
- Leaves don’t decompose to humus
- Dry branches promote bushfire
- Birds are invisible

Eucalyptus

Acacia auriculiformis

Acacia sp

Let’s say big “NO” to these exotic varieties
BUT plant local varieties
The text on the page discusses the impact of climate change on cultivation systems and the importance of traditional knowledge in应对 droughts.

Key points:
- HYV Crops need lots of Groundwater
- 1 kg Rice needs 4000 kg Water
- Groundwater is getting lowered day by day
- Monoculture System Damages Crop Diversity
- Traditional Knowledge to Face Drought:
  - Local people have ideas of cyclic recurrence of drought
  - Drought tolerance crop cultivation; i.e., Aus Rice, Millets,
  - Sweet potato, Maize, Pumpkin, Pulses, Mustard, Radish
  - Rural villages “One home, One pond” is an excellent practice
Natural Disasters & Traditional Wisdoms

People facing natural disasters for thousands of years & they have rich traditional knowledge & experience. Modern world overlooked these but it is very scientific.

Traditional Homes fenced with Bamboo, Coconut, and Areca nut as windbreaks

No alternatives to face Tornadoes but Bamboos

Coconut withstands Cyclone Aila but Albizia richardiana was uprooted & damaged many homes

Weaving bird’s nest indicates wind direction

Be Safe in Disaster!!
Right Plant in Right Habitat
Food Security by Traditional Knowledge & Organic Farming other than Cereal Crops

- Potato
- Sweet Potato
- Jack Fruit
- Pumpkin
- Musk Melon
Wonder in Waste Management: Traditional Rural Waste Management!
Though it is difficult to manage waste in City area but Rural people are doing it for years with success. 100% recycling!!!

Utilization & Decomposition Chart of Household Refuses
Droppings Excreta

Chicken

Duck

Pigeon

Babies

Sweeping Heap

Compost
Fruits

- Human
  - Faeces
    - Latrine/Compost
- Cow
- Goat
- Peelings
- Seeds
- Dung/Droppings
  - Sweeping Heap
  - Feeds/Food Propagation
    - Decomposition Compost
Earthenware

Pitcher, Pots, Containers, Motka & Utensils, etc.

Broken pieces

Root
Aeration

Clothes / Fiber

Kantha

Bag/Rag/Napkin

Decomposition

Compost
Thank You