Promoting traditional food systems for better nutrition and the Bioversity International’s nutrition strategy

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State of Hunger

**FACTS:**

- Globally, close to one billion (925 million) experience chronic hunger.
- 578 million (62% of global total) undernourished in Asia-Pacific region

*Values in million*

**Data Sources:** FAO Hunger Portal 2012, Konuma 2012
Malnutrition and Hidden Hunger

- Missing micronutrients
  - At least 2 billion worldwide
  - Mostly women and children

- 60% of child deaths linked to poor nutrition
Diseases of ‘affluence’

- Obesity
- Cardiovascular diseases
- Type II diabetes

Increasing among poor people in both rural and urban areas

WHA resolution 57.17 urged member states to “… adopt, among other things, increase consumption of fruits and vegetables, and legumes, whole grains and nuts, and to take measures to preserve and promote traditional foods and physical activity.”

(World Health Assembly (WHA) resolution 57.17. 2004: Global Strategy on Diet, Physical Activity and Health)
Asia-Pacific is a mega diversity center.
‘Medicalization’ of Nutrition

• Dietary diversity option largely ignored

• Medical establishments see three approaches to tackling malnutrition:
  - supplements;
  - fortified foods; and
  - bio fortified staples.
Dietary Diversity- Part of Solution

• Broaden diversity in food
• Promote consumption of neglected and underutilized species
  - Indigenous, locally adapted and nutritious
    ▪ Perceived as backward
    ▪ Abandoned by research and policy
• Promote healthy diets, especially for women and children
Nutrition and Biodiversity

• Biodiversity - Basis of diets throughout human history

• Many traditional food systems have healthy elements based on local species of high nutritional value.

• Loss of traditional elements in modern diets
  - Nutrition transition/ change in diet culture
Overall, an estimated 10,000 plant species have been collected and cultivated for food…

…but only 30 contribute over 90% of the world’s caloric intake
4 cases promoting traditional food systems

1. Millets of India -
   Finger millet, little millet, foxtail millet, barnyard millet, proso millet, kodo millet

2. African Leafy Vegetables

3. Andean Grains –
   Quinoa, Canihua, Amaranth

4. Tropical Fruits –
   Mangifera, Garcinia, Nephelium, citrus
An illustration of the food system that can be used to plan interventions for improving the process efficiency and effectiveness.

Source: Anderson 2011
Minor millets of Inda (Tamil Nadu)

- Reliable and thrive under difficult conditions, thus, sparing wider environment
- High nutrition and low glycemic index
# Nutrition

<table>
<thead>
<tr>
<th>Millets</th>
<th>Protein</th>
<th>Fibre</th>
<th>Ca</th>
<th>Fe</th>
<th>Riboflavin</th>
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<tbody>
<tr>
<td>Brown rice</td>
<td>7.9</td>
<td>1.0</td>
<td>33</td>
<td>1.8</td>
<td>0.04</td>
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<tr>
<td>Wheat</td>
<td>11.6</td>
<td>2.0</td>
<td>30</td>
<td>3.5</td>
<td>0.10</td>
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<tr>
<td>Finger</td>
<td>7.7</td>
<td>3.6</td>
<td>350</td>
<td>3.9</td>
<td>0.19</td>
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<tr>
<td>Foxtail</td>
<td>11.2</td>
<td>6.7</td>
<td>31</td>
<td>2.8</td>
<td>0.11</td>
</tr>
<tr>
<td>Little</td>
<td>9.7</td>
<td>7.6</td>
<td>17</td>
<td>9.3</td>
<td>0.09</td>
</tr>
</tbody>
</table>

- Kodo millet
- Finger millet
- Barnyard millet
- Little millet
Minor millets of Inda (Tamil Nadu)

- Reduce drudgery
- Develop new products
- Education, public awareness and marketing

Better nutrition and livelihood
Elimination of drudgery makes millets viable options and more attractive food for households.
Value-Added

• New Products
  – Cheaper
  – Healthier

• Marketing
  – Income

• Education
  – Empowerment
  – Self-esteem
African Leafy Vegetables
(Botswana, Cameroon, Kenya, Senegal and Zimbabwe)

Rural Outreach Program, World Vegetable Center..

• Hundreds of species:
  – Much more nutritious

• Focus on women
  – Home gardens
  – Feeding the family
African Leafy Vegetables
(Botswana, Cameroon, Kenya, Senegal and Zimbabwe)

- New seed systems and agronomic techniques
- Market links and Value chain
  - Training for clean and high-quality produce
  - Partnered with Family Concern (NGO) and Uchumi Supermarkets

Sales up by 1100% in 2 years
Tropical fruits in SEA

Garcinia, Mangifera, Nephelium and Cirtus

- Strengthen sustainable livelihoods and food security in rural communities - Malaysia, India, Indonesia and Thailand
- Promote good practices for the management and conservation of tropical fruit genetic resources
- Enhance farmers’ incentives to maintain these species on-farm
Tropical fruits in SEA

- Promote their consumption
- Identify market and non-market values
- Strengthen market linkages
Impact pathway

- **Scientific knowledge**
- **Indigenous knowledge**

**Knowledge on Tropical fruit diversity & management**

- **Set of good practices identified and tested**
- **Capacity building on good practices**

**Good practices diffused & adopted project sites**

- **Regional networks**

**Good practices & methods diffused & adopted regionally & globally and used to formulate certification schemes**

**Enhanced income, nutrition and household food security**
Challenges

• Link traditional food systems with nutrition condition of people
  – Rural smallholder farmers
  – Urban & peri urban population
  – Communities at risk of traditional food system loss

• Improve the knowledge about production management of specific agrobiodiversity;

• Nutrient content of the variety of food as affected by genetics and environment
Challenges

- Patterns of food production and consumption as it affects the positive links of agriculture, nutrition, and health

- Understanding how the global agricultural system and the benefits derived from agrobiodiversity influence the drivers of global dietary consumption patterns, nutrition and health status
Bioversity’s Nutrition Strategy for 2011-2021 centres on using food and nutrition system approaches to improve human nutrition and health.
To develop strong methodological and empirical evidence on how agricultural biodiversity contributes not only to livelihood and ecosystem benefits but more importantly to dietary diversity and nutrition.
With particular focus on the role of local and traditional foods as well as neglected and underutilized species.

Research Questions:

1. How does on-farm agrobiodiversity contribute to household consumption and to dietary diversity and quality?

2. How can we link agrobiodiversity to improved nutrition and health outcomes and benefits and do these links have an impact?

3. Can agrobiodiversity be scaled-out for commercial use while maintaining biodiversity and ecosystems and improving human health?

4. What does agrobiodiversity imply for peri-urban and urban markets and what do trends in urban markets imply for potential success of agricultural biodiversity?
Research Questions:

5. How can we better use and promote local knowledge of agrobiodiversity to improve the health of households?

6. What new tools and methodologies can be created and validated that measure agrobiodiversity associated with dietary patterns?
Objectives

- To strengthen the empirical evidence of agricultural biodiversity's role for nutrition and health

- To ensure that the production of more nutritious foods, through commercial pathways, reflects agricultural biodiverse practices and cultural and consumer preferences
Objectives

- To determine best practices and delivery systems of agricultural biodiversity in nutrition and health development programmes

- To mainstream the role of agricultural biodiversity into public health and nutrition policy and practice by sharing evidence and providing local solutions
Initiatives, partnerships and platforms

- CGIAR Reform:
  - Integration of ABD and NUS elements into CRPs
- IFAD, FAO, CBD
- Platform Initiatives
  - CFF and CFFRC, PAR, GFAR-NUS
- FARA: - ABIA Initiative and Framework
- APAARI: Suwon Agrobiodiversity Framework
- GFAR-ITPGR Initiative on agrobiodiversity and traditional varieties
Recommendations:

In order for agrobiodiversity used in traditional food systems to unleash its potential as:

- a safety net against hunger;
- a rich source of nutrients for improved dietary diversity and quality; and
- a basis for strengthening local food systems and environmental sustainability (Frison et al. 2006).
Recommendations:

We have to strengthen the link between agrobiodiversity and nutrition

- Develop methodological and empirical evidence
- Knowledge of nutritional content of varieties and species
- Incorporate in planning initiatives
- Integrate in national programs
Integration into overall agriculture and health programmes

Policy, programme, strategies and legislation

NARS / NGO institutional

Community level

International, national and local levels

Gene banks and research/extension

*In situ* and on-farm conservation & use

Capacity building, education/awareness at all levels
Thank You!