Course Objective
Foster participants to evaluate Upland Rice Varieties (NERICA) to select best adapted for respective countries

Achievement Objectives
Acquire fundamental knowledge in
1. Theory and Practice of Cultivation and Management of upland rice
2. Varietal evaluation and selection
3. Purity maintenance and multiplication of seed paddy
4. Prepare Action Plan for Rice Varietal Selection

Training Process
Lectures: Theory and Concepts
Practices: Learn by doing
Study tours: How it is happening
Field Program in IRRI

- Upland rice system in Africa
- Development of IRRI upland rice varieties
- Crop establishment methods for upland rice
- Upland rice management practices
- Upland rice based cropping systems
- Factors affecting adoption of improved varieties by farmers
- Rainfed upland rice, aerobic rice and NERICA
- Farm equipment/-tool and land preparation
- Screening for drought tolerance and disease resistance
- Identifying target upland rice environment
- INGER and germplasm exchange
- Farmer participatory varietal selection
- Review of Action Plan

Few NERICA Accessions
Rice Blast Disease Screening

Close Examination of Disease Symptoms
Variety Evaluation

Variety Evaluation
Sampling for yield component analysis

Samples transported to laboratories
Yield Component Analysis

Yield Component analysis
### Grain yield and other characteristics - 2008

<table>
<thead>
<tr>
<th>Variety</th>
<th>Duration (d)</th>
<th>Panicles/m²</th>
<th>Grain weight</th>
<th>Yield (t/ha)</th>
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</thead>
<tbody>
<tr>
<td>NERICA 2</td>
<td>122</td>
<td>225</td>
<td>20.1</td>
<td>5.16</td>
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<tr>
<td>NERICA 3</td>
<td>125</td>
<td>291</td>
<td>23.4</td>
<td>6.14</td>
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<td>NERICA 4</td>
<td>128</td>
<td>264</td>
<td>24.1</td>
<td>5.62</td>
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<td>NERICA 5*</td>
<td>130</td>
<td>219</td>
<td>20.9</td>
<td>5.82</td>
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<td>NERICA 7</td>
<td>127</td>
<td>192</td>
<td>26.3</td>
<td>5.60</td>
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<td>241</td>
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<td>NERICA 16</td>
<td>121</td>
<td>232</td>
<td>24.5</td>
<td>5.12</td>
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<td>Yumenohatamochi</td>
<td>131</td>
<td>307</td>
<td>24.2</td>
<td>4.99</td>
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</table>

LSD (0.05) 41 1.0 1.34

NERICA 1 late** 202 ---- ----
NERICA 6 late** 311 ---- ----

* already withdrawn from the NERICA list of cultivars
** 3 to 4 weeks late
IRRI Gene Bank

Machineries for Small Scale Farming - IRRI
Participatory Varietal Selection

Progress of Training

Country   No. of participants
Benin      2
Ethiopia   2
Gambia     1
Ghana      1
Kenya      2
Malawi     4
Mozambique 2
Nigeria    2
Sierra Leone 1
Tanzania   6
Uganda     3
Zimbabwe   4

Updated: Dec. 2008
NERICA Staff - TBIC

- Mr. TAKADA, Hiroyuki (Director – Training)
- Ms. SONOYAMA, Yuka (Asst. Director)

- Technical Advisors
  - Dr. SHOHARA, Ken-ichiro (Plant Pathology)
  - Dr. YAMADA, Mitate (Soil and Fertilizer)
  - Dr. DHANAPALA, M. P. (Plant Breeding)
  - Mr. TAKAMA, Hidetoshi (Agric. Economics)

- Instructors
  - Mr. KOJIMA, Nobuki (Upland Rice Variety Selection Techniques)
  - Mr. TOSHIMITSU, Kozo (Upland Rice Variety Selection Techniques)

- Field Technicians
  - Mr. YAGUCHI, Akio
  - Mr. SHIMOMURA, Shuichi
  - Mr. HORIBE, Sadauki

Onaga Geoffrey - Uganda

Thank You
Sri Lanka

- Sri Lanka, is one of the smallest of the South Asian nations, 29 km southeast of India across the Palk Strait in the Indian Ocean. Sri Lanka was not the name by which the island was always known.
- The Greeks and Romans knew it as Taprobane, the Arabian sailors as Serendib, the early Europeans in Asia as Zeilan or Seilan, the Portuguese as Ceylao, and the British as Ceylon. The Island nation has also been referred to as "The Pearl of the Indian Ocean".
Lanka, Taprobane or Serendib

Pliny’s Taprobane:
"a land ‘banished by nature outside the world’ and hence free of the vices (wickedness) that plague other countries”

In Taprobane:
"nobody kept a slave, everybody got up at sunrise and nobody took a siesta (nap) in the middle of the day; their buildings were only of moderate height; the price of grain was never inflated; there were no law courts and no litigation ... [and] the king was elected by the people on the grounds of age and gentleness of disposition and as having no children, and if he afterwards had a child, he was deposed, to prevent the monarchy from becoming hereditary.”
James S. Romm. Ultima Thule and Beyond, 30:133
The early inhabitants of Sri Lanka
Cultural Heritage - Polonnaruwa

Lord Buddha – Parinirvana
Irrigation schemes — an inherent treasure
The Last Kingdom - Kandy

Cultural Events
Ceylon Tea - Most Important Crop
Natural Rubber – Second Important Crop

Coconut – The Third Important Crop
Rice – The major staple
Rice facts – Sri Lanka

- Total paddy land extent: 0.77 m ha
- Irrigated extent: 35%
- Cultivation seasons: 2 (Maha, Yala)
- Cropping intensity: 113%
- Average Yield: 3.7t/ha (rough rice)
Animal Power in Agriculture

Land Preparation
Water buffalo – most widely used animal power.
Plowing – usually 2 to 3 times
Plowing by small tractor
Manual tillage is not uncommon.
Cleaning and Plastering Bunds
Rice Straw - Organic Manure

Burning Straw – Not Approved
Second Plowing

Leveling
Draining water for seeding
Rice Seed

Germinating seed
Direct Seeding – Puddled lowland

Direct Seeding – Rainfed lowland
Seedling Development

Uprooted Seedlings in the Nursery
Transplanting - Manual

Rodents – a major pest in rice cultivation
**Nutrients lead to high yield**

Macro Nutrients
- Nitrogen (N)
- Phosphorous (P)
- Potassium (K)

Micro nutrients
- Zn, S

Organic manure
- Soil physical, chemical and biological properties
- Soil Colloids and Cation Exchange Capacity

**Pest control – Paddy bug**
Pest control – leaf folding and rolling caterpillars

Brown Planthopper Control
Sampling Insect Population for IPM

Granular Insecticides Application
Harvesting
Harvesting & Transport

Stacking
Threshing
Drying for Winnowing

Winnowing
Winnowing

Winnowing
Storage of Paddy

Parboiling for milling
Rice in the Market

- Brown Rice
- White Rice
- Parboiled Rice
Rice Statistics

- Population: 20 million
- Annual per capita consumption: 105 kg
- Total requirement: 2.1 m tons (milled rice)
- Total production: 1.8 m tons (milled rice)
- Annual deficit: 0.3 m tons

Self sufficiency is a goal far and away

Thank you