The Agro-Ecological Village

Experiences in the Philippines, China and the Gambia

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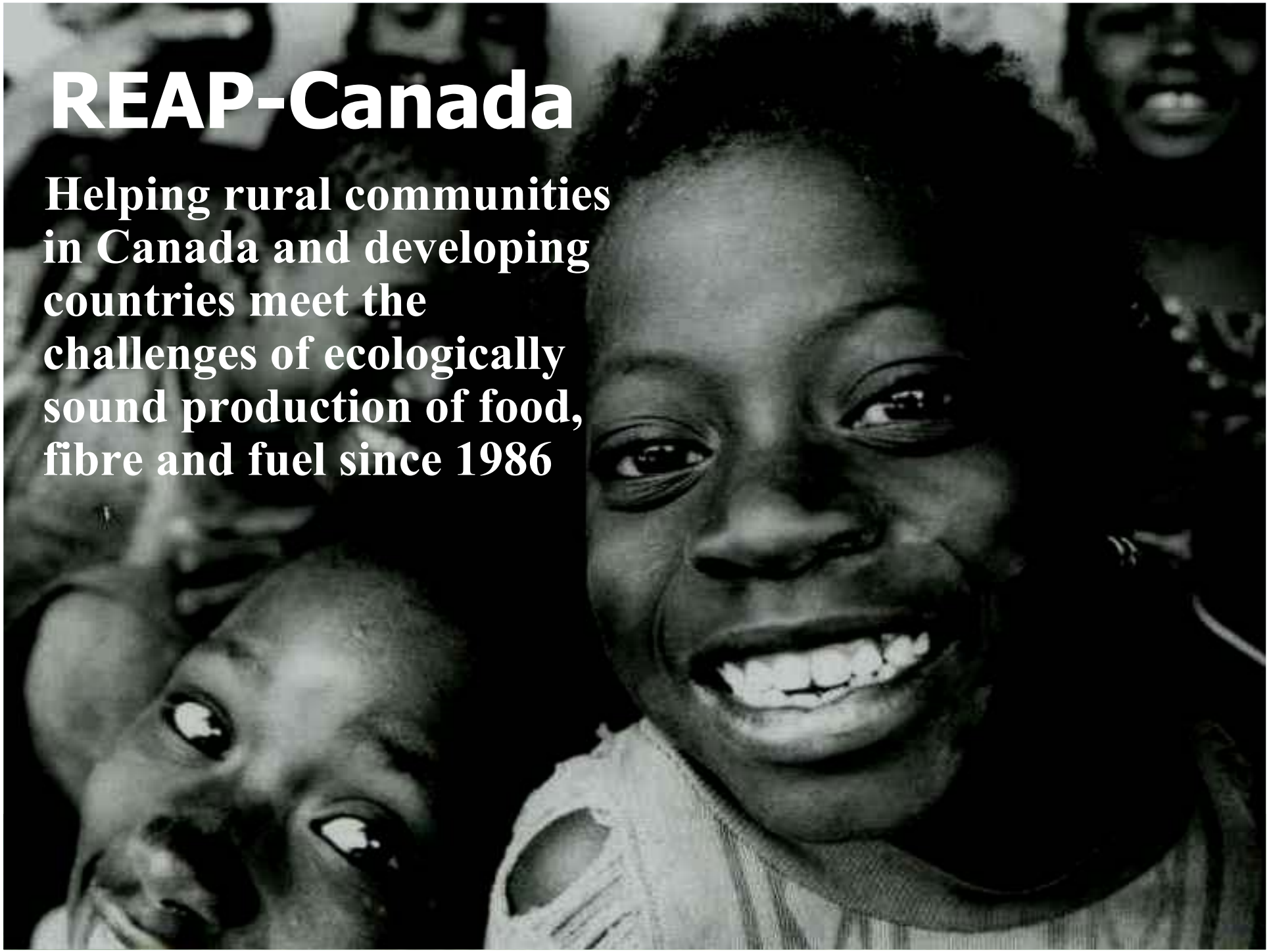
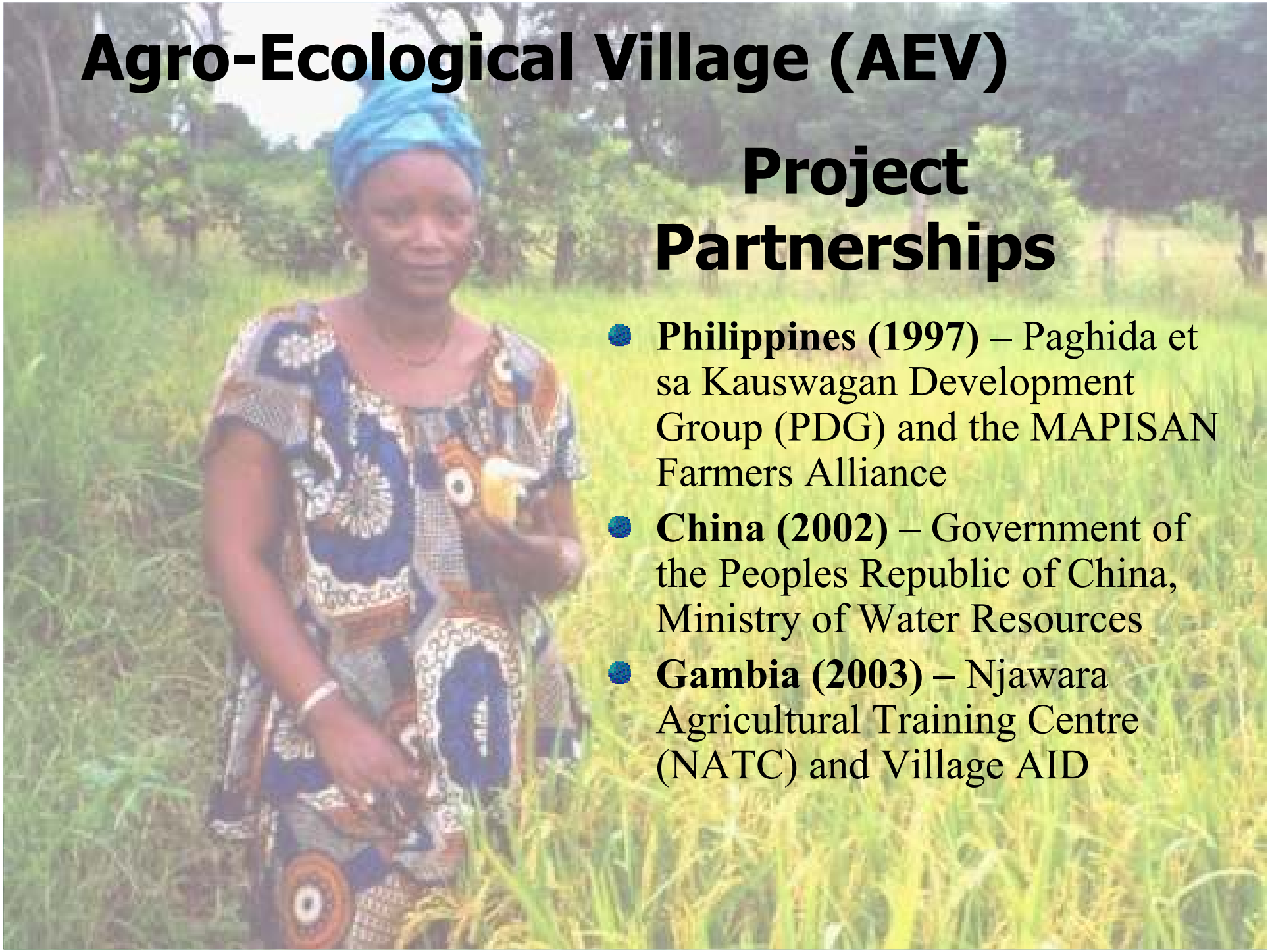

REAP-Canada
Helping rural communities in Canada and developing countries meet the challenges of ecologically sound production of food, fibre and fuel since 1986

Agro-Ecological Village (AEV)



Project Partnerships

- **Philippines (1997)** – Paghida et sa Kauswagan Development Group (PDG) and the MAPISAN Farmers Alliance
- **China (2002)** – Government of the Peoples Republic of China, Ministry of Water Resources
- **Gambia (2003) –** Njawara Agricultural Training Centre (NATC) and Village AID

Common Socio-economic Problems in Rural areas of the Philippines, China and Gambia

- Limited education
- Lack of financial resources
- Limited access to land
- Lack of overall awareness of local ecology and sustainable resource management

POVERTY

Common Agricultural Problems in the Philippines, China and Gambia

- Monoculture farming
- Overgrazing by livestock
- Drought and low rainfall
- Extreme weather
- Deforestation
- Crop residues removed

REDUCED AGRICULTURAL PRODUCTIVITY

- Low soil fertility
- Severe erosion & loss of soil organic matter
- Desertification
- Salinization
- Vulnerability to climate change

Challenges with Conventional International Development Models

- Loan intensive
- Top-down
- High cost
- Low-empowerment
- Difficulty of replication
- Lack of outreach to masses

HAVE SO FAR BEEN UNABLE TO UPLIFT PEOPLE FROM POVERTY

Participatory Development

"its not the destination but the journey that counts"

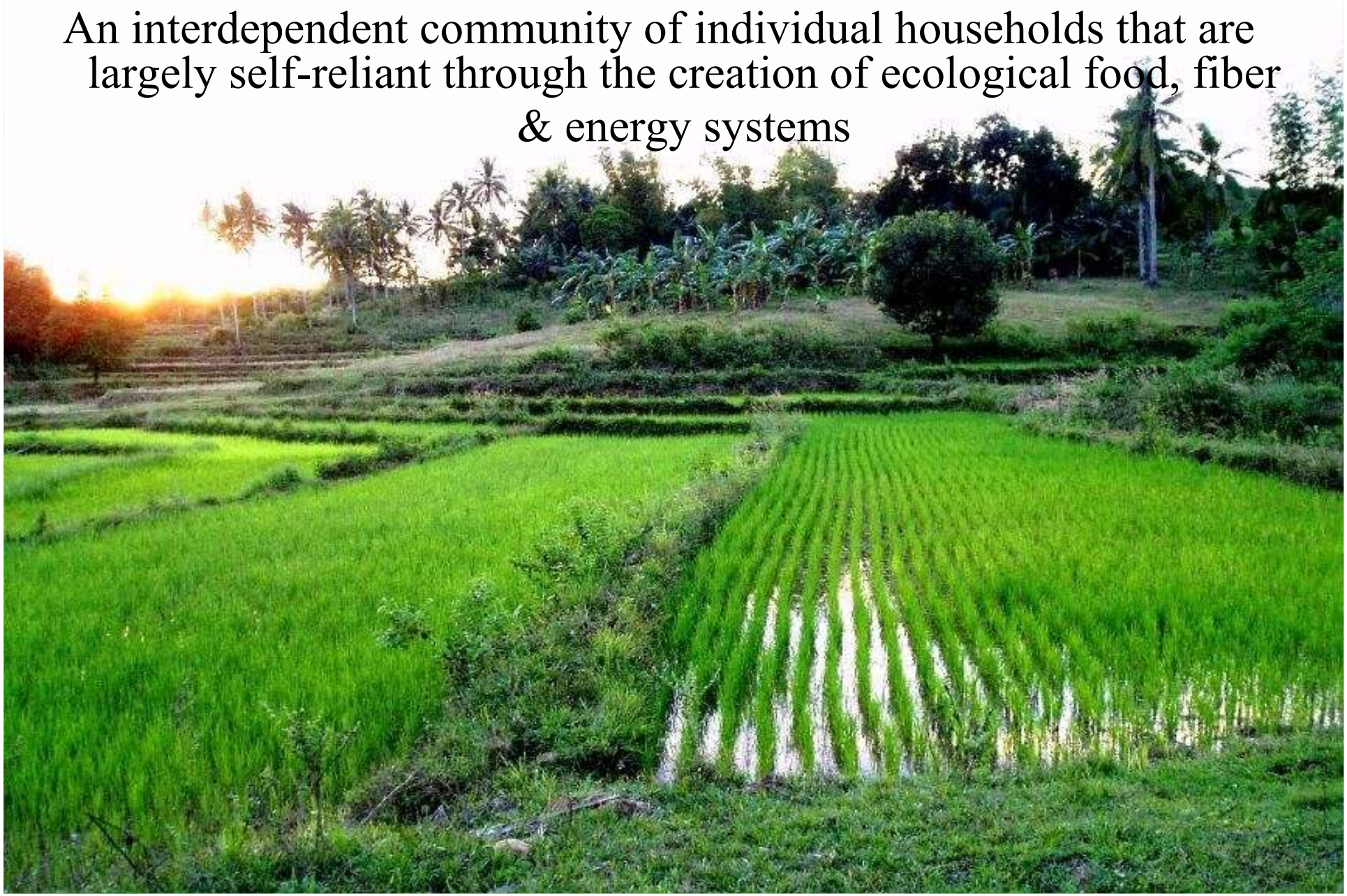
- **Involvement by local beneficiaries and other stakeholders in the creation, content and conduct of a program or policy designed to change their lives**
- **Emphasizes local capacities**
- **Avoids the imposition of priorities from the outside**
- **Increases long-term sustainability of projects**

The AEV involves:

- ***Participatory Assessment***
- ***Participatory Training***
- ***Participatory on-farm Research***

The Agro-Ecological Village

An interdependent community of individual households that are largely self-reliant through the creation of ecological food, fiber & energy systems



Self-sufficiency for rural villages

	Conventional Agriculture	Agro-Ecological Village Approach
Food Supply	Processed, imported foods and animal feeds	Farm production of principal food crops
Soil tillage	Annual crops and tractors	Minimizing tillage, perennial crops and draft animals
Seeds	Hybrid, transgenic GMO seeds	Community seed banking
Soil fertility	Off-farm chemical N,P,K fertilizer	On-farm: Biological N fixation, compost, crop rotation, green manures
Pest management	Chemical herbicides, insecticides, fungicides	Mechanical weeders, crop rotations, intercropping, bio-controls
Marketing	Cash crops for export	Household food security with a diversity of crops, value added products and a Focus on local markets
Resources	Loans for purchasing inputs	Local Farmers Associations, efficient use of on-farm resources to minimize inputs

The Agro-Ecological Village

Developing the Social, Ecological and Technological infrastructure of communities

The 5 major activities of Agro-Ecological Village development

Baseline Data Gathering

- Participatory Rural Appraisal (PRA)
- Agro-ecological & socio-economic surveys

Participatory Rural Appraisal

Data collection and analysis is undertaken by local people, with outsiders facilitating rather that controlling the process

Objectives

- Counter ineffective and unsustainable historical development efforts stemming from top-down approaches
- Provide analysis of the local situation and agro-ecological problem areas
- Plan and develop context appropriate development programming, project activities and monitoring programs

Institutional Building

- Participatory Action Planning
- Facilitate community leaders & organizers through the establishment of Farmers Associations
- Linkages between government, Universities, research institutions and other CBO's

Capacity Building

- Farmer-to-farmer training network and Ecological Training Course
- Gender development
- Participatory Monitoring and Evaluation (PM&E)

Farmer-to-farmer training

Trainings are customized to local needs and evolve through on-going assessments. The basic ecological farming module includes:

- Soil Fertility Management
- Cropping systems
- Weed management
- Pest & disease management
- Soil & water conservation
- Livestock Management
- Year-round food security
- Food processing & preservation
- Agro-forestry
- Perennial grasses

Gender Development

- Involve active participation of both genders in project activities as trainers, COs and participants
- Increase women's role in decision making in communities
- Ensure gender issues are incorporated into all project activities.

PM&E Program

Allows farmers to monitor their own progress through indicators such as:

- **Agricultural yield and food availability**
- **Farm income**
- **Ecological cropping practices in use**
- **Success in field trials**

Farm Planning & Field Implementation

- “Learning Farms”
- Farm Weatherproofing
- Sustainable livestock
- Soil and water conservation
- Food Footprint
- Appropriate Technology

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Learning Farms

Farmer led research on a "working farm":

- On-farm Demonstrations
- Adaptability Trials and Crop Improvement
- Community Seed Banking
- Farmer-led plant breeding

On-Farm Demonstrations

Farmers demonstrate E.F.S. (Ecological Farming systems):

- Crop Rotations
- Green Manures
- Multiple Cropping
- Composting
- Live Fencing

Adaptability Trials and Crop Improvement

Farmers test different varieties of field crops for adaptability to their local environment.

Successful varieties are scaled up on farmers farms for further production.

Community Seed banks and Exchanges

- Farmers collect and preserve seeds to conserve genetic diversity
- Farmers learn how to propagate plant material and develop plant material improvement programs

Farmer-Led Plant Breeding

Farmers learn how to breed varieties adapted to their local environment and growing conditions.

In the Philippines, ECO-RICE varieties have been developed that combine SRI techniques, Biological Nitrogen Fixation (BNF) and ratooning.

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Farm Planning/Weatherproofing

Assisting rural communities to manage and adapt to changes in climate by improving water use efficiency on farms to stabilize production and minimize erosion during extreme weather events

- Farm diversification
- Soil organic matter improvement
- Drought tolerant annual crops, fruit bearing trees and perennial fodder grasses

Livestock Improvement

Livestock can create ecological sustainability on farms or contribute to ecological decline.

Farmers learn ecological and sustainable methods for:

- Improving genetics adapted to the local environment
- Semi-intensive management
- Fodder Crop Production
- Animal health and nutrition

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Soil and Water Conservation

- Conservation of crop residues
- Contour farming
- Checkdams
- Composting/Bokashi Organic Fertilizer

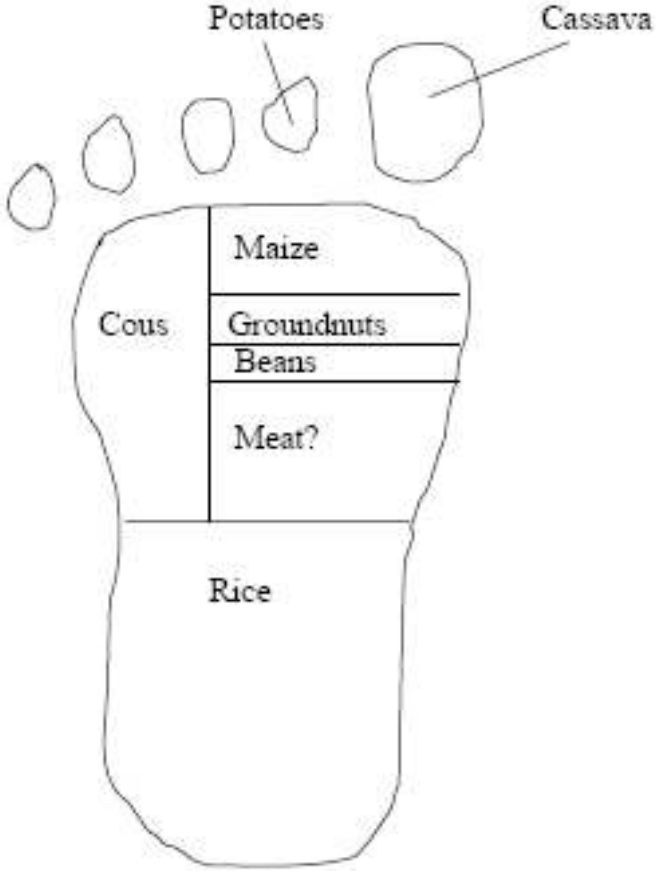
Food Footprint

<u>Step 1:</u> Determine household food consumption

<u>Step 2:</u> Estimate the yield of crops produced

<u>Step 3:</u> Determine amount of land required to produce each item of food

<u>Step 4:</u> Develop strategies to maximize land use efficiency of food crops produced while increasing land available for income-generation

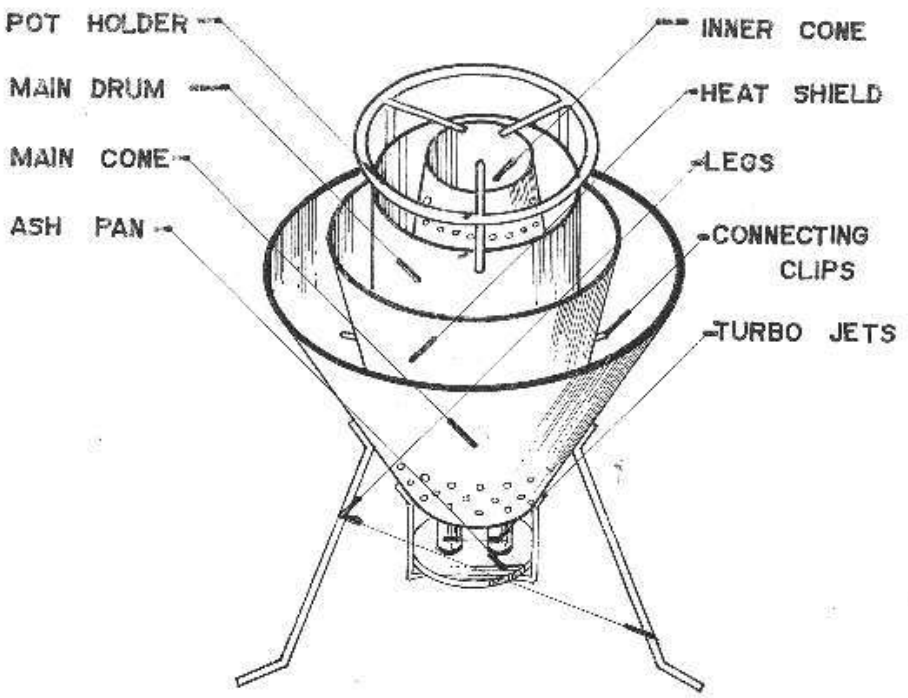


Appropriate Technology

Farmers need access to low cost appropriate tools for developing their farms ecologically.

REAP has worked to help support farmers organizations manufacture their own tools.

Appropriate Technology



Mayon Turbo Stove

- Utilizes waste agricultural residues (rice hull)
- Improves indoor air quality
- Reduces deforestation
- Reduces labour for women

Summary

The AEV model is a logical evolution for rural development programming. It integrates the best management practices in rural development with sustainable knowledge in ecological farming systems training and development.

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Thank you!

Xie xie! Salamat!

Jire Jeff!