ICRAF Ecosystem Restoration Program in North-East Asia (NEA)

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Sloping Land Management Program in DPR Korea (SLM project)

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World Agroforestry Centre (ICRAF)
Ministry of Land and Environment Protection (MoLEP), DPR of Korea
Swiss Development Cooperation Office DPR Korea (SDC)
2008-2015

Design of greenhouse gas benefit monitoring, reporting and verification system for a livestock NAMA in Mongolia (MRV project)

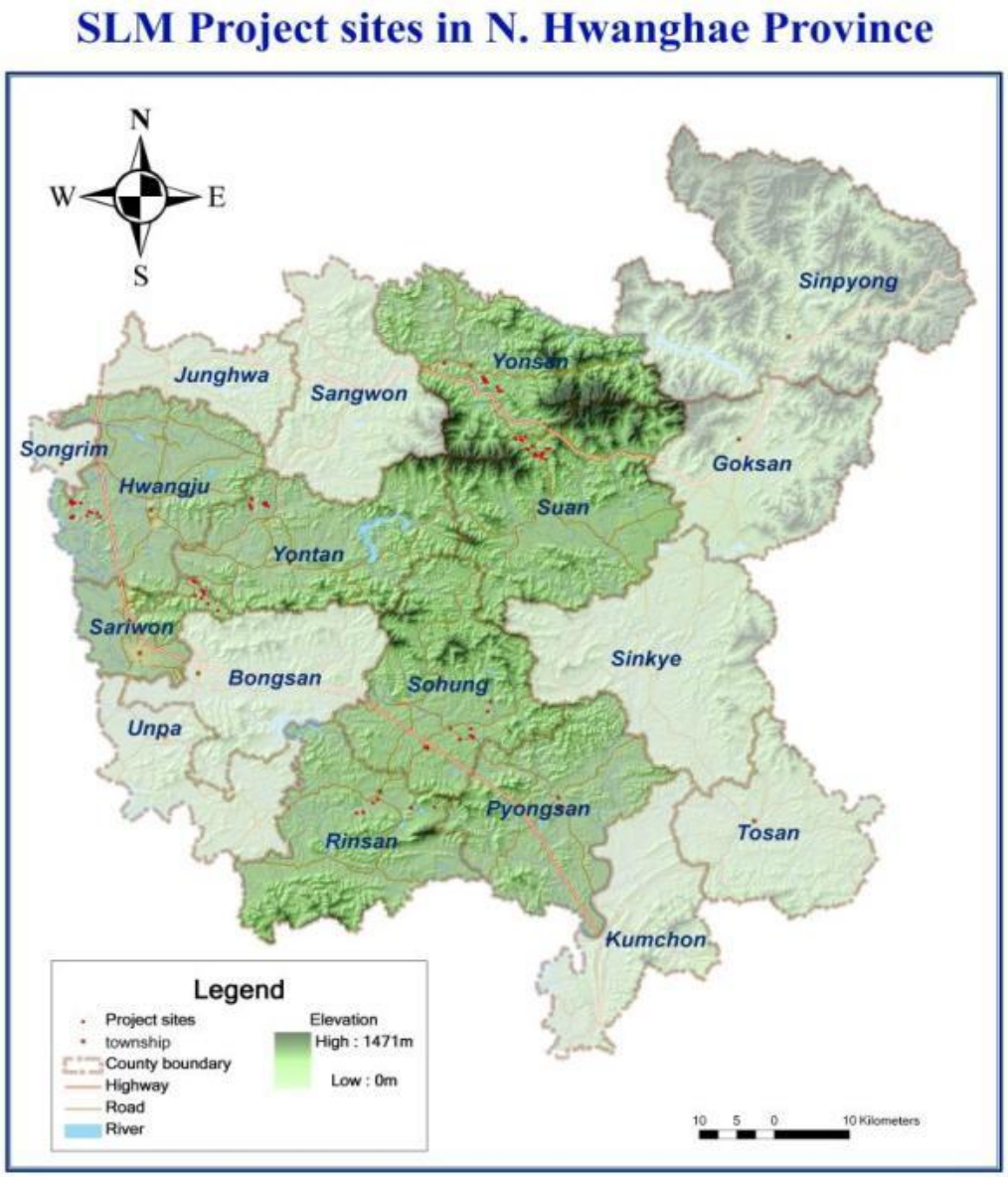
Andreas Wilkes
Values for Development
World Agroforestry Centre (ICRAF)
Mongol National Livestock Program (NLP)
2014-2015

SLM project

SLM project: Critical issues

- Deforestation and forest degradation (especially in near the settlements)
- Main causes;
  - ✓Sloping land cultivation due to food shortage
  - ✓Over extraction of fuel wood
  - ✓Forest fire and forest pest
  - ✓Recently serious impact of climate change

SLM project: Project Sites



Training Workshop on Participatory Agroforestry Development

August 4-10, 2008, Suan County Northern Hwanghae Province, DPRK

What does development mean?

What is Participator Agroforestry Development? Key concepts

Participatory =
participation with local knowledge

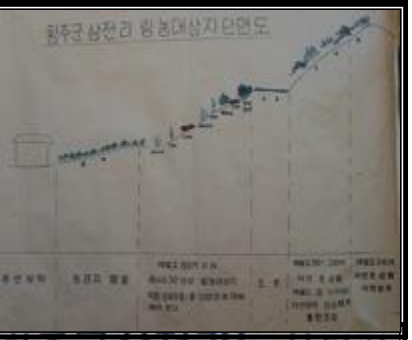
Trees on farm or farm with trees

Trees for products +services

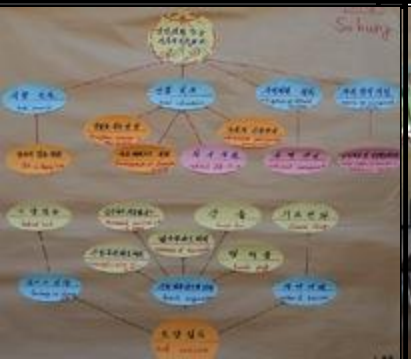
Tool Box in Participatory Agroforestry

- ✓Tools for landscape mapping
  - Transect, land use map
- ✓ Tools for social mapping
  - Interviews, social map, seasonal calendar
- ✓Tools for problem diagnose
  - Problem tree analysis
- ✓Tools for species selection
  - Free list, ranking, scoring
- ✓Tools for agroforestry technique
  - Diagram map, sketch map











During Training

Tree Species Selection

During Field Work

Trend of selection:

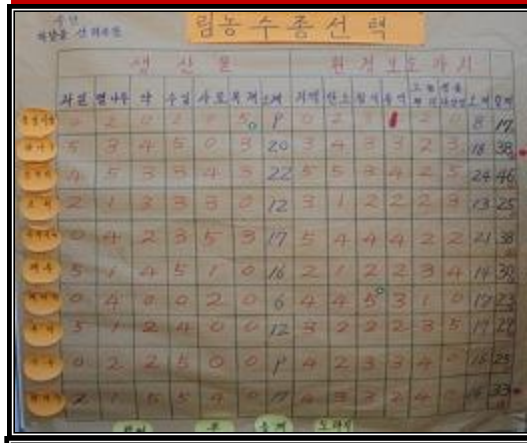
- ✓ More participation from SLUGs
- ✓Common species to local species
- ✓ Afforestation to economic value

  e.g. fruit trees
- ✓ Single value to multipurpose
- ✓ Crop friendly (agroforestry)









Participatory Agroforestry Cycle (in field work)

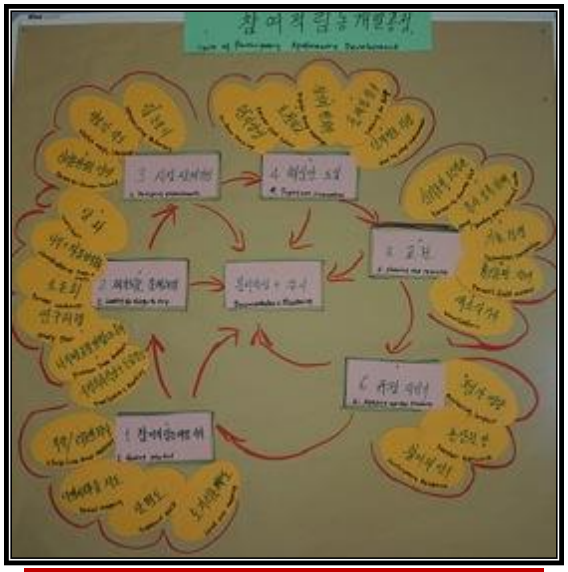
3. Designing experiment

4. Trying out innovation

2. Looking for things to try

5. Sharing the results

Documentation & monitoring



1. Getting started

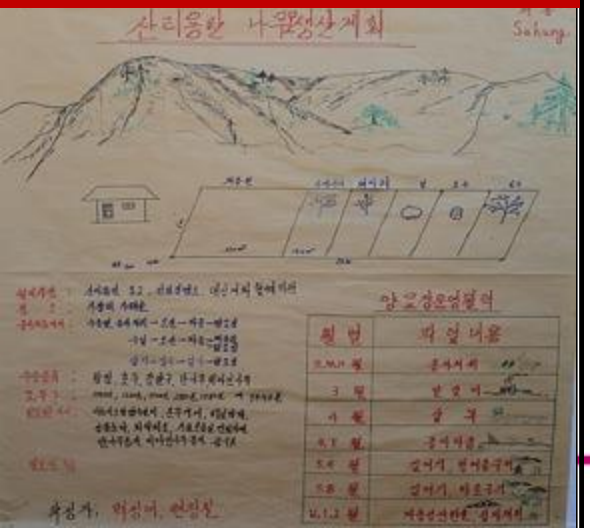
6. Keep up the process

Sloping Land Planning

Agroforestry Planning

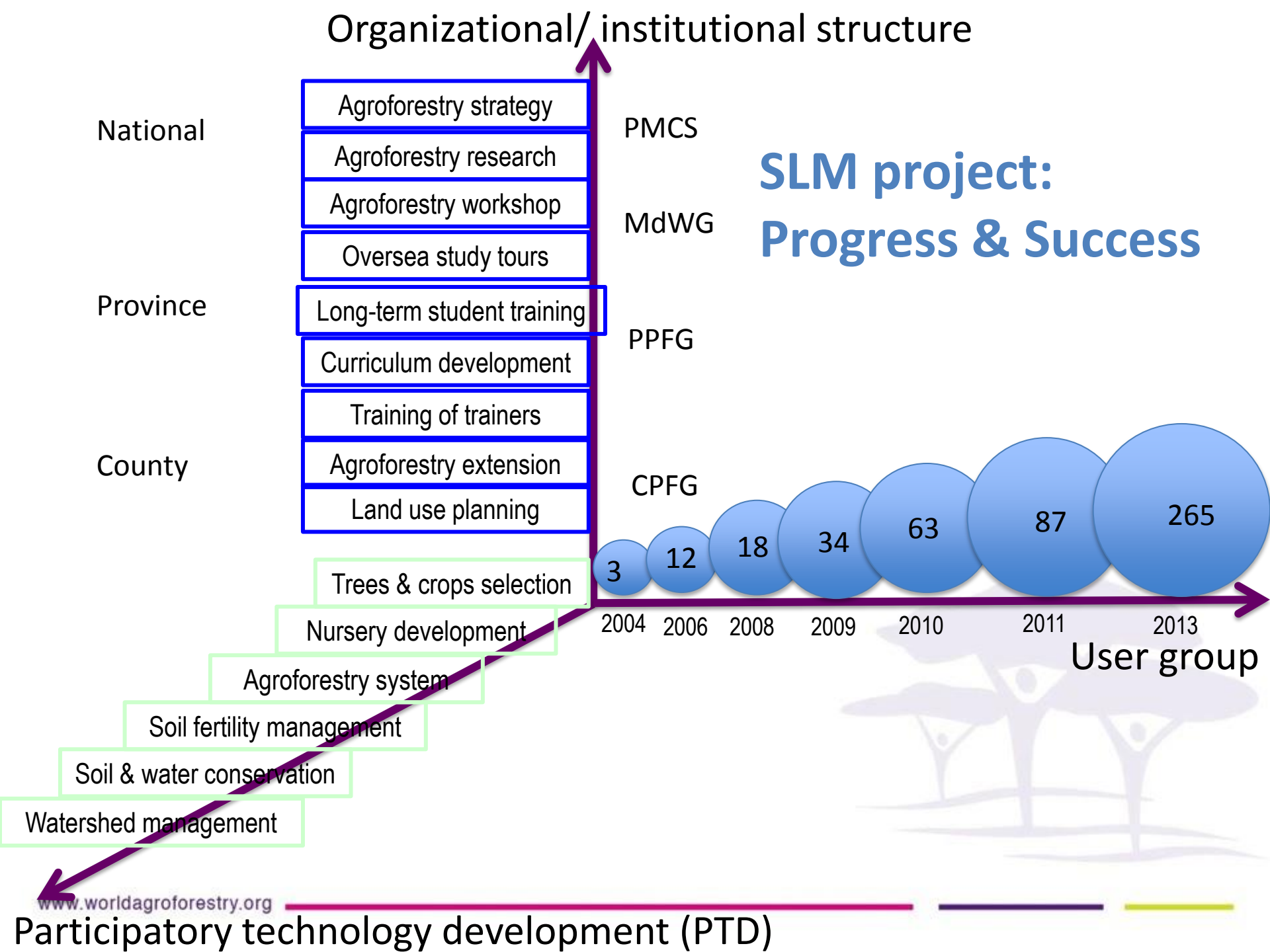
Agroforestry Technique

SLUG Nursery Map



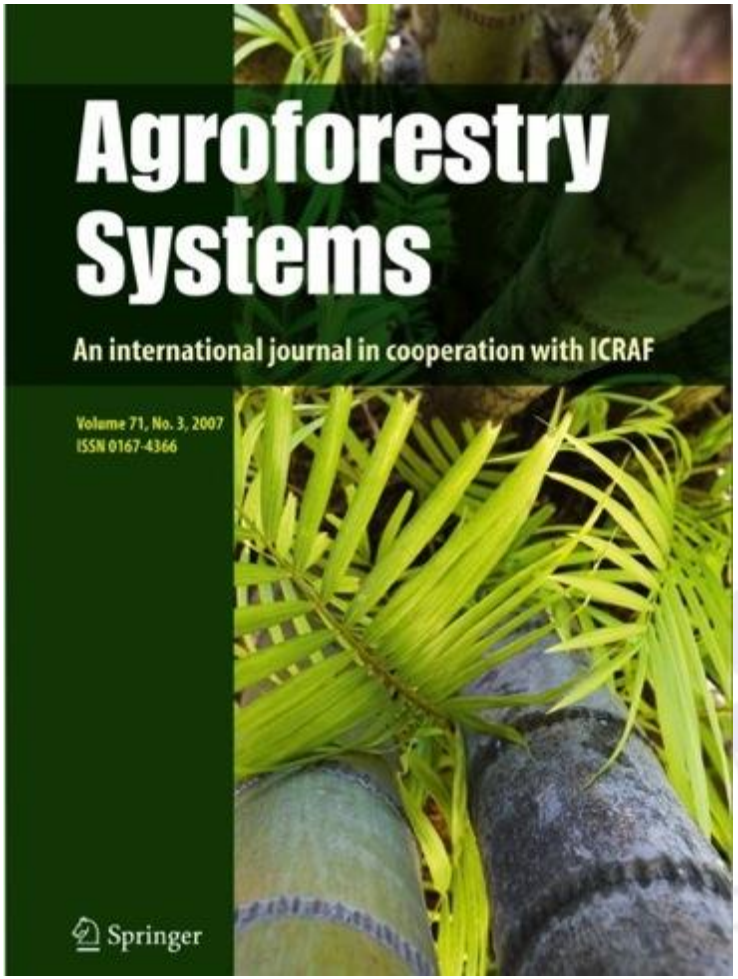
Inviting Investment

Central Nursery Plan Map


Organizational/ institutional structure
National
Province
County
Agroforestry strategy
Agroforestry research
Agroforestry workshop
Oversea study tours
Long-term student training
Curriculum development
Training of trainers
Agroforestry extension
Land use planning
PMCS
MdWG
PPFG
CPFG
SLM project:
Progress & Success
3
12
18
34
63
87
265
2004
2006
2008
2009
2010
2011
2013
User group
Trees & crops selection
Nursery development
Agroforestry system
Soil fertility management
Soil & water conservation
Watershed management
www.worldagroforestry.org
Participatory technology development (PTD)

Success of Suan Model for Sloping Land Management

Xu et al, Agroforestry System (2012) 85:291-303



1. County Level Demonstration

- ✓ Demonstration run by a group of SLUGs
- ✓ Technical support from Forest Management Board

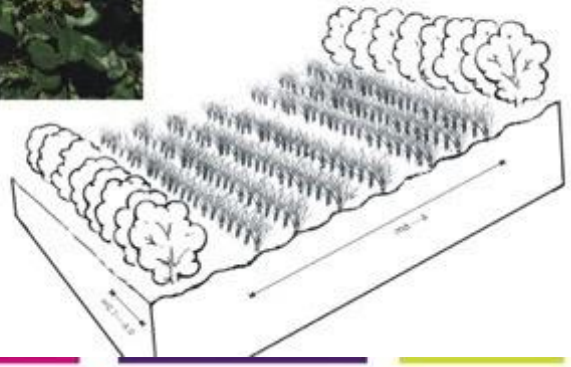
2. Double cropping in potato and upland rice

- ✓ Participatory technology development
- ✓ Selecting disease-free and “cold-tolerant” potato variety for early planting
- ✓ Raising rice seedling in the nursery
- ✓ Soil fertility and weed management

- ✓ Other crops for food security: sweet potato and peanut

3. The Aronia based agroforestry

- ✓ The aronia berry (Aronia melanocarpa)
- ✓ Good for alley cropping or agroforestry
- ✓ High marketing value



4. The larch-based agroforestry

- ✓ Larch (Larix leptopepis): fast-growing
- ✓ Good for reforestation
- ✓ Food cropping in early stage
- ✓ Good timber species

5. Incorporating agroforestry for forest restoration

- ✓ Incorporating agroforestry into forestry program
- ✓ Multi-purpose species into forest board nursery

6. User Group Nursery

- ✓ 25 nurseries run by SLUPs
- ✓ Two user group shared one nursery
- ✓ Specialized different fruit trees for each nursery

7. Biological soil erosion protection

- ✓ Terraced sloping land with/without stonewall
- ✓ Grass/bush species for biological control
- ✓ Incorporating livestock for income generation

8. Geographic Information Technology for participatory planning

- ✓ Remote sensing and spatial database development
- ✓ Participatory mapping and assessment
- ✓ Visualization and dialogue
- ✓ Participatory planning.

9. Agroforestry training & education

- ✓ Agroforestry training workshops
- ✓ Agroforestry curriculum development

Outputs/Outcomes

Widely application of SLM techniques

Outputs/Outcomes

Improving food security through agro forestry and crop diversification

Outputs/Outcomes

Integration of soil and environmental protection

Publication

- Management of Mountains and Rivers (2006)
- Forest Pest Management (2007)
- Agroforestry Technology (2008)
- Agroforestry Pest Control(2009)
- Walnut Cultivation (2011)
- Participatory Agroforestry Development in DPR Korea (2011)

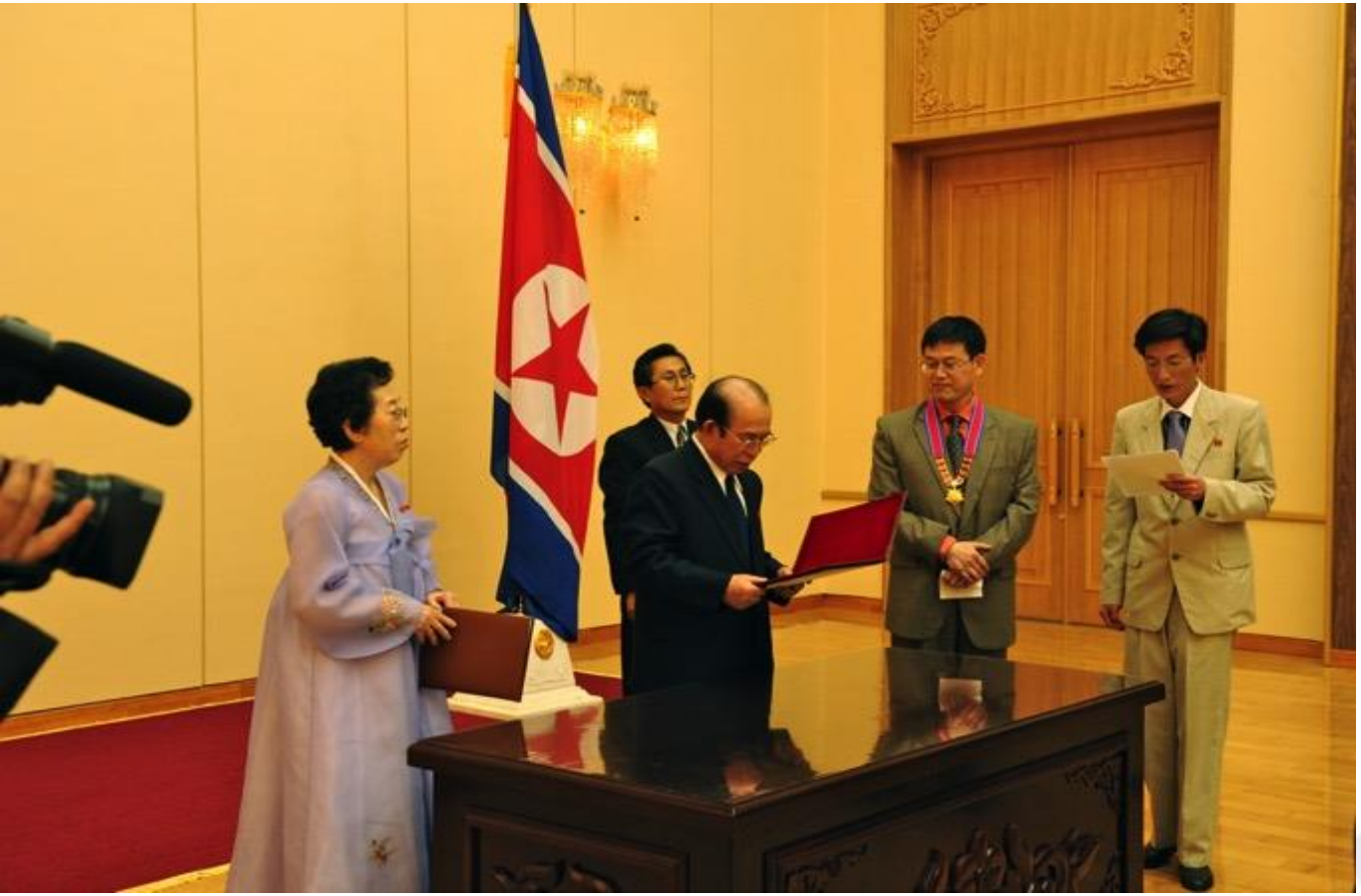
International Cooperation

World Agro forestry Center

TECHNICAL SUPPORT

Public awareness on Agro forestry development

DPRK Honorary Doctor's Degree Conferred on Prof. Xu Jianchu



World Agroforestry Centre

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MRV Project

Project background: government policy

- In 2006 agriculture GHG emissions were 41% of national emissions; livestock emissions were 91% of agriculture emissions (i.e. **37% of total emissions**).

- In 2010 GoM has stated its intention to reduce livestock GHG emissions not by directly reducing livestock numbers, but by **increased productivity per animal**.

- The **Mongol National Livestock Program** (NLP) supports many activities to increase livestock productivity, e.g. breeding, forage production and feeding, animal health, marketing etc.

- An MEGD / ADB study described how the activities of the NLP can be made into a concrete proposal for a nationally appropriate mitigation action (NAMA) to be supported with climate finance.

Project background: NAMAs

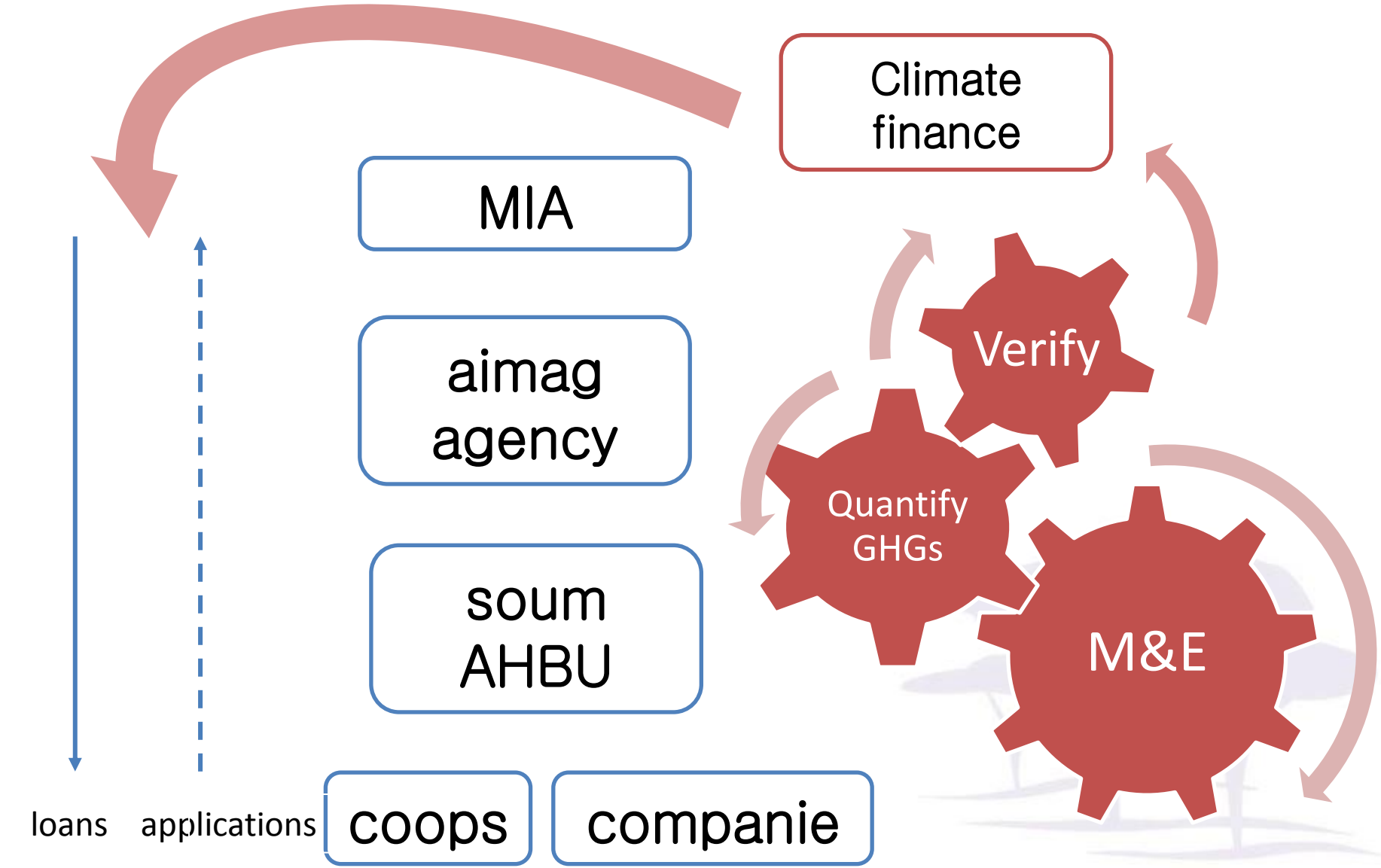
- The international community has agreed to limit global warming to 2°C.
- Developed countries pledged **$ 100 billion p.a. by 2020** for climate change action in developing countries.
- **Green Climate Fund (GCF)** is the main financial mechanism; it now has US$ 2.3 bn; it may start operations in 2015. There are also existing bilateral funds.
- **The Bali Action Plan (COP 13, 2007):** developing countries will take "**Nationally appropriate mitigation actions**…in the context of sustainable development, supported and enabled by **technology, financing and capacity-building, in a measurable, reportable and verifiable manner**"
- To date, countries have officially proposed 51 NAMAs, **but none in livestock, so we need to prove that GHG reduction and MRV are possible** in the livestock sector

Project background: NAMA concept

MEGD / ADB study elaborated a concept for a grassland / livestock NAMA based on selected NLP activities (2013–2020):

Activity	Baseline emissions	NAMA emissions	Total emission emission reductions	Cost ($/tCO$_2$e)
Sheep breeding	15.4 kg CO$_2$e /kg	13.1 kg CO$_2$e /kg meat	29,000 tCO$_2$e	29
Beef breeding	4.9 kg CO$_2$e /kg	4.5 kg CO$_2$e /kg meat	49,000 tCO$_2$e	17
Dairy breeding with AI	0.7 kg CO$_2$e / liter	0.6 kg CO$_2$e / liter	46,000 tCO$_2$e	15
Milk processing	823 kg CO$_2$e / year	757 kg CO$_2$e / year	59,000 tCO$_2$e	86
Grassland management	0	−0.12 per ha per year	230,000	16
Total			413,000 tCO$_2$e	

Proposed NAMA concept



Project background: MRV

- **NAMAs must be measurable, reportable and verifiable**
- MRV systems should help the country manage NAMAs to produce results and support decision-making and national planning
- MRV system should clarify:
  - **What to MRV?** -> Indicators
  - **How to MRV?** -> Measurements, accuracy, data storage and reporting, quality assurance
  - **When to MRV?** -> Frequency
  - **Who should MRV?** -> Person / institutions responsible for M&R

Key question for us is: **How to build on existing M&E system for NLP to**

(a) meet information needs of NLP stakeholders and

(b) provide activity data for GHG quantification?

About this project

Objective:

This project aims to **provide proof-of-concept** for quantification of GHG benefits of livestock breeding activities suitable for a NAMA.

Outputs:

1. Evidence that improved breeding activities are feasible, effective and economically attractive;
2. Guidelines for monitoring and evaluation of livestock breeding activities of the NLP;
3. Guidelines for quantification of GHG benefits.

- Reports, policy briefs
- Discussion by national stakeholders on NAMA proposal

Project main activities and outcomes

Document implementation:

- Select ongoing breeding interventions of NLP
- Document how they are implemented
- Assess effectiveness and barriers in implementation

Evidence that the activities are feasible

Develop M&E system:

- Training for stakeholders in participatory M&E
- Design M&E system

Guidance on results-based M&E for NLP

Develop GHG benefit measurement system:

- Set up quantification model using Tier 2 approach
- Design measurement, reporting and verification system on basis of M&E system

Guidance on MRV

Dissemination:

- Policy briefs, reports, guidance documents
- Discussions by stakeholders on NAMA proposal

Policy outcomes

Values
for development

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Creating Value for Partners in Development


Thank you!