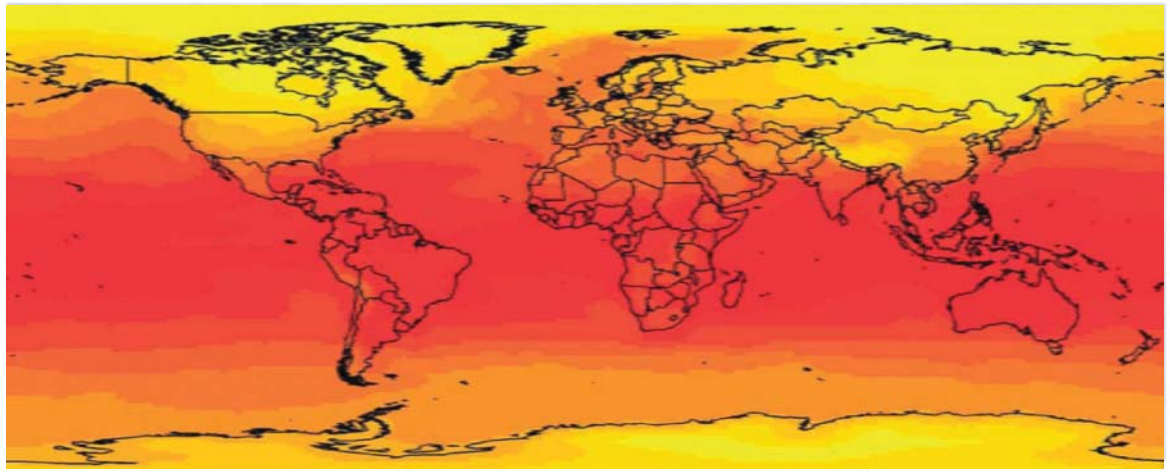

Status of climate change adaptation in agriculture sector for Lao PDR.

1st Rhine-Mekong Symposium
"Climate change and its influence on water and related sectors"
8-9 May 2014, Koblenz, Germany

Vanxay, DDMCC

Contend

1. Location of Laos
2. Institutional climate change involvement
3. Potential social-economic development
4. Climate change and its impact to agriculture
5. Existing climate change policy
6. Reason learn from NAPA 1 implementation through CCA in agriculture sector

1. Location of Laos

2. Institutional climate change involvement

- Ministry of Natural Resource and Environment there are 17 department such: the Ministry office, the institution, the information center, the department of monitoring and evaluation, and 13 departments.

- The department of disaster management and climate change (DDMCC) is the focal point of UNFCCC and involvement of climate change adaptation and mitigation in Lao PDR.

3. Potential social-economic development for Laos

- The Gross Domestic Product (GDP) for five years amounted 219,795 billion Kip. The average annual GDP growth has been 7.9 % which target by 0.4 %. The breakdown of GDP by sectors is as follows:
  - Agriculture-forestry sector increased by 4.1 % (against plan rate 3.3%); accounting for 30.4% of GDP.

4. Climate change and its impact to agriculture

The majority impact to agriculture in Laos is:

- Flooding
- Drought
- Pest
- Plant disease

5.Existing climate change policy

1. Strategy of Climate change

- Related to 7 sectors namely:
  - Agriculture and food security
  - Forestry and land use change
  - Water resource
  - Energy and transport
  - Industry
  - Urban development
  - Public health

  All of 7 sectors is include both of adaptation and mitigation

Existing climate change policy (cont)

2. Technical working group on climate change

- In the technical working group involvement to 8 line Ministries such:
  - Ministry of natural resource and environment
  - Ministry of agriculture and forestry
  - Ministry of energy and mine
  - Ministry of Science and technology
  - Ministry of transportation
  - Ministry of industry and commercial
  - Ministry of public health
  - Ministry of education and sport

Existing climate change policy (cont)

3. National climate change action plan 2013-2020
   - Mitigation
   - Adaptation
   - Capacity building
   - Awareness

Existing climate change policy (cont)

4. National Adaptation Plan and Action (NAPA)
   - NAPA follow up 1
   - NAPA follow up 2
   - Forest Strategy year to 2020 (forest cover 70%)

6. Reason learn from NAPA 1 implementation through CCA in agriculture sector

General CCA Strategies Agriculture

- Natural Resources Management
  - Efficient and equitable water management and protection watershed
  - Forest protection
  - Strategic use of land resource: use, access, ownership
  - Soil fertility improvement
- Supply chain management - reworking value chain
- Conservative application of credit and finance systems
- Matching on- with off-farm opportunities: local production and processing, marketing

Characteristics Upland Farming Systems

CCA Goal: Long-term arrest of declining resource base (forests, biodiversity, soils and water resources) and measures to regenerate these, reflective to **critical local micro climate**

- **Variable farm conditions**: slope, altitude, soil fertility, ethnic practice
- **Several parcels**: hilly “side slope”, “valley bottom”, uncultivated land
- Farms depending on forests for a wide range of good and ecological services
- Low soil fertility
- Critical water management
- Changing landscapes and erosion
- Limited infrastructure, roads, markets and services
- **Issues:** no rotation; no terrace system, short fallow period; pest, disease, weed control with pesticides

Characteristics Lowland Farming Systems

CCA Goal: Long-term arrest of declining resource base (forests, biodiversity, soils and water resources) and measures to regenerate these, reflective to sustainable market analyses, including CC damages into cost of production

- Industrialization, commercialization, mechanization of agriculture
- Larger parcels of land - cash crop orientation
- Monoculture systems
- Lower level of bio-diversity
- Access to water, water management, irrigation
- Vulnerability to animal disease outbreak
- Soil fertility

Water Management

CCA Goal: manage availability, quantity and quality of water under unpredictable CC conditions

1. Minimizing water runoff in the farms: contour planting, soil erosion control.
2. Construction and improvement of village and farm ponds.
3. Efficient use of water from irrigation systems and ground water, micro irrigation, trip irrigation.
4. Improving soil water holding capacity.
5. Adapted farming during floods.
6. Protection of watersheds and groundwater.

Soil fertility Improvement

CCA Goal: minimize losses from dry or wet conditions through healthy plants on fertile soils

1. Enhancing role of legumes through multiple cropping: peanut, soybean, green pea etc.
2. Enhancing role of trees: water infiltration, build up organic matter, protect micro-organism, leaf biomass.
3. Integrating livestock production: natural fertilizer, on-farm fodder production .
4. Bio-fertilizers: composting, bio-extract liquids from fermentation of vegetables and fruits.

Forests and Trees

CCA Goal: maintain essential functions for climate stabilization and agriculture linked ecosystems

1. Protected areas for conservation and water availability
2. Forestry instead of logging
3. Industrial tree crops: coffee, cacao, rubber and etc.
4. Integrated with annual crops and livestock.
5. Home and school gardens.
6. Seed production and nurseries.

Innovative Production Systems

CCA Goal: improve access to nutrients, conserve moisture, avoid chemicals – adapt to natural processes

1. SRI System for Rice Intensification (SRI)
2. Direct Seeded Mulch-based Cropping Systems (SVC) conservation agriculture
3. Organic agriculture: small scale vegetable production

Post-harvest Handling

CCA Goal: minimize loss of production associated to changes in water regime, flood, drought, temperature, singular climate events, wind, new pests and diseases

1. Optimize harvesting practice and timing
2. Cleaning – Drying
3. Sorting
4. Packaging
5. Cooling
6. Storage
7. Processing

Thank you very much