

Cambodia's Climate Change Priorities Action Plan for Agriculture, Forestry and Fisheries 2014-2018

PREFACE

Cambodian agriculture has played important role in reducing poverty, generated employment for rural people, and contributed to national development goals and regional market integration. However, this sector is sensitive to on-going climate changes.

To response to the impacts of the climate change, the CCPAP was designed for the implementation to reach the CCCSP's goals of the MAFF's policy.

THE EXPECTED MAIN OUTCOMES:

1. Agricultural output increased to 36.80 million tons, with national average rice yield of 3,250 kg by 2018, with Value of agricultural exports increases by 30%.
2. Beneficiary income in areas vulnerable to climate change increased by 20%, while employment in agri-business and agro-industrial sector increases by 20%. Also, cash crops area planted, resilient to climate change increase by 20%.
3. Mapping areas of cropping land, forest demarcations for agricultural zoning, multi-development areas established
4. 10,000 aquaculturists promoted and serve as model farmers for climate resilient and aquaculture expect to increase from 74,000 tons in 2012 to 171,160 tons by 2018.
5. At least, 5 million farmers received agricultural extension services aimed at improving resiliency to climate change.
6. Livestock production increases by 3% per year, and loss of livestock due to climate change decreased within 5% annually.
7. At least 50 enhanced rubber clones are expected to distribute to the planters to be planted in any AEZ from 2014 – 2018.
8. 3 REDD+ projects fully operate to obtain carbon credit, and 10,000 hectares of forest rehabilitated to enhance carbon stock and biodiversity.
9. Approximately 0.78M Ha of healthy mangrove forest and 0.068M Ha of flooded forest, and more than 300 of fish species and their critical habitats identified and protected.

MAFF'S CCCSP GOALS:

1. To ensure food security and farmers' livelihood improvement through an increase of crop production, agro-industry at 10% per annum.
2. To enhance sustainable natural rubber development by focusing on climate change's adaptation and mitigation measures.
3. To increase sustainable livestock production (3% p.a.) and animal health control, and contribute to reduce 1% greenhouse gases emission from animal production after 2015.
4. To enhance sustainable forest management through forestation and reduce emission from forest degradation and deforestation, to obtain carbon credit, and to enhance forestry communities by ensuring zero balance deforestation by 2020, and
5. Enhance management, conservation and development of fishery resource in a sustainable manner through strengthening capacity, taking appropriate actions and actively participating to deal with climate change .

SITUATION ANALYSES

AGRICULTURE

- The Cambodian floodplain supports a diverse rice-based farming system, where the different cropping patterns depend on flood duration and receding water.
- A recent economic analysis suggests that with a 1C rise in temperature, annual mean crop loss falls by around ten percent.
- Cambodian agriculture is extremely vulnerable to climate change.
- In wetter areas of the country, however, potential increases in flooding may make rice cropping unviable in low-lying areas if they are too frequently inundated; in turn, this may require a more transformational change to production systems, such as through shifting rice cropping into the dry season through irrigation.
- Rubber plantations experience large negative shifts in production area in Western Cambodia due either to increase in rainfall or prolonged drought.

LIVESTOCK

- Small and medium scale commercial operations are most vulnerable and have limited capacity to adapt.
- The increase in commercial units is associated with an increase in the use of higher performance genetics and higher productivity management practices such as heightened stocking rates. High-performance breeds managed in high-density systems will be negatively affected by expected climate changes.
- Threats that were considered include temperature change, precipitation change, change in soil water availability, and changes in frequency and intensity of drought, flooding, and storms. In the livestock theme report these threats were each considered at provincial level where exposure to specific threats varied considerably.

FORESTRY

- Forest resources have, however, been seriously degraded.
- The RCG has now set a policy target of maintaining 60 percent forest cover, which would mean that Cambodia would have the high percentages.
- Climate change predictions suggest that forests will be affected by changes in temperature, precipitation and shifts in seasons. Such changes directly affect the existence and vitality of species and ecosystems, and will increase the risks associated with pests.
- Under emission scenarios SRESB1 and SRESA2, up to 2050 most lowland forest will be exposed to a longer dry period, particularly forest areas located in the northeast and southwest. More than 4 million ha of lowland forest, which currently has a water deficit period of between 4 and 6 months, will become exposed to a water deficit period of between 6 and 8 months or more. However by 2080 soil water conditions will be similar to current conditions.

FISHERIES

- Capture fisheries in the LMB is buffered against climate change by the exceptionally large aquatic ecosystem biodiversity. As a result, some species will likely benefit from the changing conditions, possibly maintaining the overall fisheries productivity, while other less adaptive species will decline. This is likely to lead to an overall loss in biodiversity.
- Cambodia fishery sector are vulnerability to climate change. A recent global study of the vulnerability of national economies to the impact of climate change on fisheries ranks Cambodia as 30th most vulnerable in the world.
- Aquaculture has been a long-established activity in parts of the LMB, particularly on the Tonle Sap Great Lake and the Mekong Delta. Aquaculture appears to be more vulnerable to climate change scenarios than capture fisheries, although it tends to have a high adaptive capacity.
- The vulnerability assessments confirm the hypothesis that aquaculture will be more vulnerable to climate change scenarios than capture fisheries.

CROSS-CUTTING

- Climate change impact on agriculture is not fall into one single sub-sector as mentioned above. However, this impact will cut across the sectors, which involve all five components including water resource.
- Agriculture (on which 71 percent of men and women in Cambodia are dependent) and natural resources management will be central for (medium-term) adaptation and to reduce vulnerability.
- Any declines in natural productivity would have serious food security implications that could not be offset by other forms of food production.
- The continue pressure on forest and land resources, which make the largest contributions to GHG emissions in Cambodia – forest resources are likely to be further degraded by human activities. The impact of climate change may also contribute to changes in forest types in the future.

AGRICULTURE AND AGRO-INDUSTRY

1. Promoting and up-scaling climate smart farming system that resilient to climate change.
2. Promote post-harvest technology for cereal crop and tuber crop, and conduct the research and transfer appropriate post-harvest technology.
3. Develop crop variety suitable to AEZ resilient to climate change (include coastal zone).
4. Promote research work on appropriate climate-smart agriculture technology/ techniques to adapt and mitigate CC.
5. Development of knowledge and information system on climate change.
6. Institutional Capacity Development for natural disaster coordination and intervention.
7. Strengthening capacity of Agricultural and agro-industry development entrepreneur and the agricultural cooperative in low emission production.

COSTING: US\$ 53.97M

RUBBER

1. Promoting, piloting and scaling up rubber clones from IRRDB (International Rubber Research Development Board) member country in responding to climate change.
2. Promoting new rubber clone trial.
3. Established Experimental networking sites and develops growth, yield, biomass, and carbon stock within existing rubber plantation in five AEZ.
4. Modifying existing Agricultural Good Practice (GAP) through additional training to technical staff related to climate change.
5. Promoting an integrated approach in efficiency energy and inputs used in latex and rubber wood production.

COSTING: US\$ 6.99M

LIVESTOCK

1. Promoting resilience in animal production and adaptation to climate change (technical package).
2. Enhancing animal waste management and climate change emission mitigation.
3. Promoting and enhancing technology development on the improvement of animal breed, animal feed, and animal health to adapt climate change.

COSTING: US\$ 25.55M

FORESTRY

1. Promoting sustainable forest management.
2. Promoting reforestation and afforestation to increase carbon stock.
3. Conducting capacity development, research and awareness raising on REDD+
4. Developing and implementing regulations and mechanism on REDD+
5. Building climate resilient capacity in forestry sector

COSTING: US\$ 16.40M

FISHERIES

1. Promoting aquaculture production systems and practices that are more adaptive to climate change.
2. Promoting climate resilience of wild fishery resources.
3. Enhancing the climate resilience in fishery sector (ECRF).
4. Enhancing fish and fisheries products in the entire value chain in response to climate change impacts.

COSTING: US\$ 10.70M

CROSS-CUTTING

1. Mapping of agriculture's productions (agricultural production, rubber, livestock, forestry and fisheries) and of land use.
2. Developing and using integrated socio-economic and climate scenarios with climate, and land use models and Establishment of Carbon Accounting Systems for agriculture, forestry and fisheries.
3. Institutional Mainstreaming Climate Change Adaptation by building capacity and scaling up community resilience.
4. Promote marginalized groups and women participation to climate change adaptation and mitigation strategy.
5. Enhance knowledge management related to climate change adaptation and promote innovation that is needed based.

COSTING: US\$73.99M

1. US\$19.40M
2. US\$7.85M
3. US\$30.99M
4. US\$5.75M
5. US\$10M

MANAGEMENT ANF FINANCING

Based on preliminary climate change financing framework updated by the CCCA, there are potential ceiling cost for climate fund for the ministry with USD 122 (of which US\$ 86 million expect for adaptation) from 2014-2018. The climate finance can significantly be increased through mainstreaming the climate aspect into usual development projects. This is achievable through greater awareness of the implication and impact of climate change is every mainstream sector. Although the magnitude of awareness is rather wide, it varies among sectors within the ministry.

MANAGEMENT ANF FINANCING

1. CCPAP delivery and mainstreaming
2. Institutional Readiness
3. Results
4. Impacts

Tracking the progress in the fundamental aspects of CCPAP (Annually)
 Tracking the progress in improving capacities and integration of climate change into sectoral policies and planning (Annually)
 Assessing the result of actions (Annually, or depending on the nature of actions)
 Assessing the progress towards ultimate climate policy and development objectives (Annual, ad-hoc for indicators that require specific studies)

The preparation of priority actions for CCPAP is one of the starting points in mainstreaming climate change plan into formal development planning. It is important that these actions will included with the next or on-going and rolling plan for PIP of the ministry.

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