

Country Report

on

Agriculture in Cambodia

Presented by: Mr. Seth Kimseng
Vice Chief, Bureau of International Organization Affair, MAFF

November 12, 2013

Address: # 2000, Preah Norodom Blvd, Phnom Penh, CAMBODIA

Tel: (855) 92387878

E-mail: kimsengseth@yahoo.com



Capital: Phnom Penh (1.7 millions)
Land area: 181,035 km²
Population: : 14,952,665 (July 2012 est)
Language: Khmer (Fr/Engl. 2nd language)
Religion: Buddhism 95%, Other 5%
Governt.Type: Constitutional Monarchy



GEOGRAPHY

- **Area:**
 - Total: 181,035 sq.km
 - Land: 176,520 sq.km
 - Water: 4,520 sq.km
- Forest cover is 10,730,781 ha or 59.09%
 - Protected forests 1,490,500 ha (FA
 - Protected areas 3,134,471 ha (MOE)
 - Concession forest 3,374,328 ha, MAFF reported that from 1993 to 2009 a total of 126 companies were granted land concessions for growing crops. Concessions for the period totaled 1,335,724 hectares in 16 Cambodian provinces.
- **Land boundaries:**
 - Total: 2,572 km
 - Border countries: Laos 541 km, Thailand 803km, Vietnam 1,228 km

- **Climate:**
tropical; rainy, monsoon season (May ~ November); dry season (December ~ April); little fluctuation seasonal temperature between 28°C to 38°C. A minimum average of 17°C in January.
- **Population: About :** 14,952,665 (July 2012 est)

DATA ON GDP AND ECONOMIC INFORMATION

- **Central bank**
- National Bank of Cambodia
- **International Reserves**
- US\$ 4.062 billion (Source: IMF; Data updated: 2012)
- **Gross Domestic Product - GDP**
- US\$ 14.204 billion (2011 estimate)
- **GDP (Purchasing Power Parity)**
- 36.01 billion of International dollars (2011 estimate)
- **GDP per capita - current prices**
- US\$ 931 (2008 estimate)
- **GDP per capita - PPP**
- \$2,361 International Dollars (2008 estimate)

- **GDP - composition by sector**
- agriculture: 30.9%
- industry: 22%
- services: 40% (2011 estimate)
- *(Data released on February 2012)*

Cambodia Context on agriculture & its conservation initiative

- The economic growth rate of all developing countries is high and the present challenge for those countries is to pursue economic development without creating additional burden on natural resources, thus preserving biodiversity and the improvement of rural life. The conservation of those resources is depending on the capacity and commitment of the countries' government to collaborate regionally together to improve the management of share resources while pursuing economic growth.
- Under the influence of rapid changes related to population growth, conditions of market integration, private or national initiatives, agrarian systems of Southeast Asia are undergoing a true mutation. Although this change allows immediate socio-economic benefits, it has medium-term negative environmental impacts with long-term repercussion on natural resources, condition of production and people's health.

- The simultaneous processes of deforestation new land extension (slash & burn), new housing and agricultural intensification have led to critical soil erosion and gradual soil exhaustion. In ASEAN areas acid upland soils and degraded soils (erosion) represent more than 60% of the total areas.
- Conservation Agriculture brings a global answer to these degradation and fertility problems, and makes it possible to gradually restore the soil production potential while maintaining economic and social benefits.

- Farming activities is responsible for substantial global greenhouse gas (GHG) emissions and this could be reduced by implementing conservation agriculture techniques. CA improves directly carbon sequestration, Large-scale implementation of CA can thus significantly contribute to controlling air pollution overall, while reducing global warming.

We aim to:

- Improve food production and supply
- Encourage an organic food and composting culture
- Implement rain collection and irrigation techniques

Scope of our work

- Improve farming practices to support village food requirements by educating them in sustainable techniques, hopefully producing a surplus harvest which can then be sold to neighboring communities and resorts.
- Demonstrating sustainable development involving the local community.
- Organic recycling and composting facilities must be created in order to manage waste and reuse every organic waste.

- Education on using symbiotic natural resources to increase yield.
- Progress so far:
- Built a water dam to collect rain water
- Investigating suitable sites for an organic farm – 4 hectares will be provided by the provincial governor

Some Activities

Environment Sector:

Five mitigation options were evaluated under each scenario using COMAP (Comprehensive Mitigation Analysis Process model):

- *forest protection (FP);*
- *reforestation with short rotation (RSR);*
- *reforestation with long rotation (RLR);*
- *reforestation without rotation using fast (RFG); and*
- *slow growing species.*

Human Health Sector:

- Control measures with focus on the reduction of malaria mortality and morbidity through early diagnosis and treatment of the disease
- Programs for health education with focus on the most critical causes of disease: watercourses and containers where mosquitoes breed and personal habits
- Improvement of general education to diminish malaria incidents.

Agriculture Sector

Forestry:

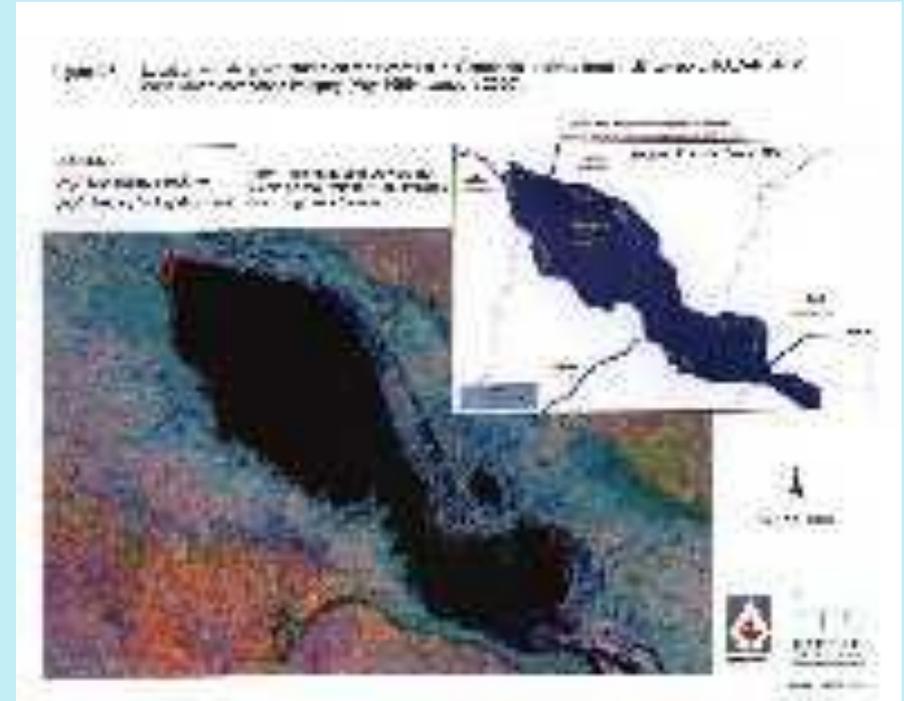
- Forest plantation establishment
- Conservation of protected area
- Establishment of appropriate legal framework, policies, and procedures for planning, management, monitoring, enforcement, and community participation in protected areas
- Improvement of forest resource management.

Energy and Transport Sector:

- Energy. Cambodia uses relatively little commercial energy per person: 44 kg of oil equivalent per capita for 1994. The country imports 100% of the required petroleum products from countries in the region (about 415.67 kilotonnes in 1994). Woodfuel and other biomass are the major energy sources for cooking for Cambodian people, especially in rural areas (over 85% of the total national energy supply in 1994).
- Combined cycle gas turbine
- Hydropower (micro hydro power plants)
- Phnom Penh city shuttles
- Improve cook stove
- Compact fluorescent
- Mass transit for rural areas
- Solar drying test bed development at ITC
- Solar energy used

RADARSAT For Improving Fisheries Management and Food Security in the Mekong River Watershed

- RADARSAT International Ltd., AERDE Environmental Research, PT Hatfindo Prima and the Fisheries Unit and Technical Services Unit of the Mekong River Commission Secretariat (MRCS).
- Funding for this project was provided by the Canadian Space Agency through the RADARSAT User Development Program. **Technology transfer** and training of MRCS personnel in RADARSAT data interpretation and analysis were key components of this project.



Technology Transfer to Remote Villagers

- King Norodom Sihanouk admires silk scarf produced by Robib villagers, with Queen Monineath, behind the King, holding another scarf, during a visit to the Royal Palace by Bernard Krisher, chairman of American Assistance for Cambodia and his wife, Akiko on December 5, 2000. On receiving the scarves the King called in the palace television crew to describe the beauty of the scarves and Robib project. The Queen commented they are of very high quality.



- With the arrival of the satellite dish, computers and a series of projects aimed at teaching the villagers how to apply the **technology**, have come new hopes for the residents of Robib village in the northwestern province of Preah Vihear. This Internet experiment in the remote jungle terrain of Cambodia, organized and funded by non-profit organizations, aid agencies and individual donors, is aimed at exploring the limits of internet practicality.

Appropriate Information Technology Transfer - Examples and Experiences from IO's Technical Co- operation Projects"

- **Implementation of Geographical Information System in the Forestry Sector**

Major Results

- Capacity building
- Establish a database on forest resources
- Development of forest management applications
- Support in institutional development

Problems

- Inter-institutional co-operation
- Inter-institutional data sharing
- Forest related information is considered as confidential
- Inefficient intra-institutional data flow (following vertical hierarchy)
- Lack of transparency of data availability
- Missing quality monitoring schemes
- Data are scattered, inconsistent and often duplicated
- Financial constraints to update the system (hard- and software)₁₉

A photograph showing a busy outdoor market scene. In the foreground, there are large, neat stacks of green bananas. Several people are present: one man is leaning over the back of a white truck on the left, another man stands with his hands behind his back in the center, and others are visible in the background near more banana stacks. The scene is set outdoors with trees and a building in the background. Overlaid on the image is blue text that reads: "Market study leading to the commercialization of renewable energy based on the solar drying products".

Market study leading to the commercialization of renewable energy based on the solar drying products

Adaptive Research at ITC



**Solar Cabinet
Dryers development**

Solar Box Dryer

Type of dryer	Direct solar
<i>Overall size - length × width (cm)</i>	152 × 70
<i>Height (cm)</i>	15.5
<i>Aperture area</i>	0.91
<i>Air inlet/outlet areas</i>	472 cm ² each (59 cm × 8 cm)
<i>Box material</i>	GI sheet, 22 SWG
<i>Tray materials</i>	Aluminum frame; SS wire mesh
<i>Glazing</i>	5 mm window glass
<i>Gap: Tray surface - Cover glass (cm)</i>	10.0
<i>Gap: Tray surface Dryer bottom surface (cm)</i>	2.5

Traditional fishes drying



Dried Products ...cont'd



Training and Dissemination Programs



Training programmes in Siem reap province

Technology Transfer

Three researchers were trained at AIT for three months on Design and Construction of Solar Dryers:

- Literature review
- Design of dryers to use locally available materials and skills
- Testing and evaluation of dryers
- Evaluation of quality of dried products
- Field visits
- Training report

Benefits of Technology Transfer

Transferring or spinning-off technologies brings real benefits in many ways. As many of the Success Stories show, any technologies can enhance the life and well-being of ordinary citizens through, for example, healthcare products, improved waste management and water recovery or landmine detection, etc.

Obvious Benefits

- eases the burden imposed on public resources through R&D by adapting technologies, systems and know-how developed in one sector to another,
- maximizes the return on investment in doing research and development,
- minimizes the duplication of research,
- provides cross-disciplinary opportunities for researchers to collaborate with other organizations,
- allows the possibility for two-way transfer – both in spin-off from sector to sectors,
- provides economic potential and motivation for both technology donors and technology receivers where the social impact is high and the potential market is large.

Conclusion

- The principal indentified route to feeding an increasing population and to mitigating climate change, in particular in the developing countries, is assisting smallholder farmer and other larger unit of agricultural production in agricultural development and especially with promotion of agro-ecological farming practices.
- The Team Assistance will help and complement the suite of loan to all projects that ADB, WB, and other donor agencies promotes the development of technology transfer in Cambodia.
- Technology transfer will be accelerated, research and development will be upheld, and policy development and dialogue will be galvanized.

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1. CIRDAP (Centre on Integrated and Rural Development for Asia and the Pacific),
2. Cambodia's Initial National Communication to the UNFCCC,
3. Cambodia ratified the UNFCCC on 18 December 1995. The UNFCCC entered into force on 17 March 1996
4. The National Communication was prepared with support from the UNDP/GEF-sponsored Cambodia's Climate Change Enabling Activity Project (CCEAP) in collaboration with other concerned agencies,
5. TAR: CAM 36634: Technical Assistance to the Kingdom of Cambodia for Capacity Building of the Inland Fisheries Research and Development Institute II, February 2005.

THANK YOU !