



CEDRIG
Operational

Cambodian Horticulture Project Advancing Income and Nutrition (CHAIN) Phase I

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Overview

General Information

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Overall goal	Promotion of horticulture value chains in Preah Vihear, Stung Treng, Kratie and Oddar Meanchey provinces, with a strong focus on women and delivering sustainable income growth and improved household food security and resilience
Country	Cambodia
Budget	CHF 4.000.000
Duration	01.12.2014 - 30.11.2017 (Phase I)

Summary

Description	In Cambodia, more than 40 % of the rural poor suffer from food insecurity. The increasing market demand for vegetable and fruits provides a huge opportunity for small holder farmers and processors, in particular women to increase income and food security. The Cambodia Horticulture Advancing Income and Nutrition (CHAIN) project supports farmers and processors in increasing sustainable production, income and resilience in four of the poorest provinces of Cambodia - Kratie, Stung Treng, Preah Vihear and Oddar Mancheay. With the particular focus on the fruits and vegetables sector, CHAIN tackles market system constraints to improve the service delivery to poor farmers households, women headed households and ethnic minorities. CHAIN will support smallholder farmers to diversify into growing fruit and vegetables through the introduction of modern horticultural techniques and market linkages required to generate much-needed additional income, and it will also address poor household nutrition by supporting a diversification of diets.
Keywords	agriculture and food security

Sectors of Intervention

Agriculture

Food security

Rural development

Water management

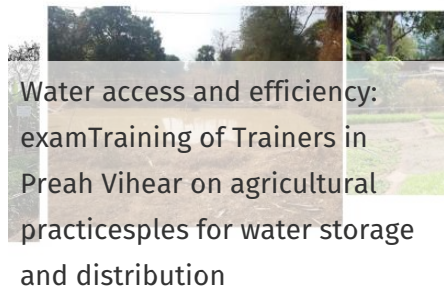
Documents

Climate Change Impact and Adaptation Lower Mekong Basin (pdf, 3.65 MB)

DRR Introductory presentation at SDC DRR Workshop, 23.08.2016 in Phnom Penh (pdf, 1.48 MB)

Images

Water access and efficiency



Water access and efficiency:
exam Training of Trainers in Preah Vihear on agricultural practices for water storage and distribution



Training of Trainers in Preah Vihear on agricultural practices



Training of Trainers in Kratie on agricultural practices



Army worm outbreak in Preah Vihear

○ Risk perspective

Hazards arising from environmental degradation

Hazard name **Pests and epidemics**

Consequence **Loss of income and crop production**

The invasion of flea beetle larvae (Chrysomelidae: Alticini) leads to a severe destruction of vegetables, especially root and leaf vegetables. Flea beetles execute their most severe attacks during dry weather and are most active on sunny days. Occurrence increased in the past 3-4 years.

> Selected Risk	Severity	Likelihood	Significance
	Harmful	Likely	Medium risk

Vulnerabilities Increased pressure on smallholder farmers and income, loss in crop and vegetable production, low means of savings, limited knowledge of mitigation measures.

Potential Measure **Training of trainers and smallholder farmer groups on Integrated Pest Management (IPM), validated IPM technologies and vegetable varieties.**

Comments Smallholder farmers have poor knowledge of adequate and integrated pest control (biological, eco-friendly measures). Overuse of chemical pesticides is a risk.

> Selected Measure

Potential Measure **Promote policy development on (bio)pesticides and other applicable technologies.**

Comments Training of trainers and workshops / policy advocacy on IPM regulations.

> Selected Measure

Natural hazards (hydro-meteorological and geological)

Hazard name **Flash floods, floods**

Consequence **Destruction of crops and vegetables, loss of income**

Weather patterns are increasingly unpredictable: increased heavy rainfall, flooding, unpredictable start of the rainy season. Long-lasting episodes with too much rain cause rotting of rice plants & vegetables during rainy season. The existing drainage and irrigation practices used by communities are largely insufficient to ensure the survival of crops and seeds during and after intense rain episodes followed by severe droughts. No sufficient early warning system is in place, neither for households nor for the agricultural sector. Current weather forecasts and traditional knowledge have proven inaccurate and unreliable.

> Selected Risk	Severity	Likelihood	Significance
	Harmful	Very likely	High risk

Vulnerabilities Communities' coping mechanisms are overwhelmed. Frequent (often annual) and often complete loss of crop production.

Potential Measure

Implement a flood early warning system (EWS)

Comments Installation of automated river gauges and design of a mobile-phone early warning system (sms, voice message) freely and publicly accessible, in cooperation with national/provincial authorities.

> Selected Measure

Potential Measure

Improve drainage capacities in high flood risk areas

Comments Communities lack technical knowledge and financial resources to develop adequate and efficient irrigation and drainage systems. Highly localized variations in exact needs. Responsibility is with the Provincial authorities (PDWRAM).

Potential Measure

Adaptation of agricultural practices at farmers level

Comments Raised vegetable beds, improved access to water (wells, ponds, climate-smart technologies incl. pumps, rainwater harvesting), mulching, early maturing varieties, protected nurseries.

> Selected Measure

Hazard name **Droughts**

Consequence **Destruction of crops and vegetables, loss of income**

Higher irregularity of the rainy/dry seasons: earlier onset of the hot season, prolonged duration of the dry season, and shortened rainy season.

> Selected Risk	Severity	Likelihood	Significance
	Extremely harmful	Very likely	High risk

Vulnerabilities Communities' coping mechanisms are overwhelmed. Loss of crop production due to disruption of the traditional planting-replanting-harvesting cycle. Traditional knowledge is no longer applicable.

Potential Measure

Trainings to smallholder farmers and vegetables farmer groups on climate-smart technologies and DRR

Comments Identify suitable solutions & technologies on water access, storage and distribution according to local conditions (farmers' needs, retailers, soil and geology). Train farmers on suitable technologies and agricultural practices adapted to a changing climate, e.g. mulching, irrigation, water-efficient crops, wind erosion, solar coverage, seed variety demonstrations, seeds/crops more resistant to floods and droughts.

> Selected Measure

Potential Measure

Risk transfer mechanisms

Comments Some farmer groups have saving components. Small to medium insurance businesses are entering Northern Cambodia only slowly due to little economic interest (yet).

Consequence

Long-term lack of water availability

Water scarcity and droughts are relatively new in the project area (tropical Aw climate). Water resources are used without regulation. Available water resources are inadequately monitored or unknown. Groundwater levels are declining at an estimated rate of 20cm/year, but no consistent water resources monitoring is in place.

> Selected Risk**Severity**

Extremely harmful

Likelihood

Likely

Significance

High risk

Vulnerabilities

Agricultural sector and smallholder farmers are already not prepared to droughts or water scarcity. Further water usage by the growing agricultural sector will put more pressure on water resources and aggravate the situation.

Potential Measure

Implement a groundwater monitoring and drought warning system

Comments Installation of groundwater monitoring gauges, and develop drought trigger points. Provide warnings and recommendations on timely planting and harvesting to agricultural actors according to current/projected water availability.

> Selected Measure

Potential Measure

Develop an Integrated Water Resources Management (IWRM)

Comments Training IWRM principles & give recommendations to various provincial authorities on watershed development planning, aquifer characteristics and recharge and maximum water abstraction rates.

> Selected Measure

Hazards arising from climate change (and climate variability)

● Impact perspective

Impact on the environment

Component of the project	Commercial and homestead producers and processors increase productivity (incl. year-round production)
Potential negative impact	Increased use of chemical fertilizers and pesticides
Significance	<p>Farmers struggle to manage insect infestations and often rely on chemical pesticides. Lack of knowledge and wrong perceptions about pesticides, underestimation of the health risks and easy access to illegal and hazardous chemical pesticides persist. Enforcement of pesticide regulations is still expected weak.</p> <p>> Selected impact</p>
Potential Measure	<p>Promote the use of organic fertilizers and pesticides, etc., and judicious use of chemicals when no other solutions are available.</p> <p>> Selected Measure</p>
Potential negative impact	Increased use of (ground)water resources
Significance	<p>Water is the mayor obstacle to produce more cycles of crops and to intensify production. Access to water and the use of appropriate water storage and distribution technologies are critical to commercial vegetable farming, as it allows farmers to continue production at times of high demand and higher prices.</p> <p>> Selected impact</p>
Potential Measure	<p>Market-based introduction of drought-resistant crop varieties and technologies to increase water use efficiency</p> <p>Comments Promote water access (wells, ponds, pumps, rainwater harvesting), increase crop per drop by mulching, drought resistant varieties, and collaborate with private sector to develop a market-system for affordable water solutions.</p> <p>> Selected Measure</p>