



S5-P1



# កម្មវិធីយុទ្ធសាស្ត្រសម្រាប់ភាពធន់នឹងអាកាសធាតុ ការបញ្ជ្រាបភាពធន់នឹងអាកាសធាតុទៅក្នុងការរៀបចំផែនការអភិវឌ្ឍន៍ (TA ៨១៧៩) (ខែកញ្ញា ឆ្នាំ២០១៣ ដល់ខែមេសា ឆ្នាំ២០១៩)



សិក្ខាសាលាចែករំលែកចំណេះដឹងស្តីពីការឆ្លើយតបរបស់កម្ពុជាទៅនឹងការប្រែប្រួលអាកាសធាតុ  
ទិដ្ឋភាពទូទៅនៃការធ្វើការអនុវត្តបណ្តាំ

លោកស្រី យូ ប៉ោនី  
អ្នកជំនាញផ្នែកគ្រប់គ្រងចំណេះដឹង និងការទំនាក់ទំនង  
៣០ វិច្ឆិកា ២០១៦



# ដំណើរការនៃការជ្រើសរើស

- សេចក្តីប្រកាស ត្រូវបានចេញផ្សាយដល់អ្នកចាប់អារម្មណ៍ដែលអាចមកពីស្ថាប័នរាជរដ្ឋាភិបាល  
អង្គការមិនមែនរដ្ឋាភិបាល សង្គមស៊ីវិល គ្រឹះស្ថានអប់រំ និងវិស័យឯកជន
- គណៈកម្មការបានពិនិត្យមើលករណីសិក្សាការអនុវត្តបន្ទុំរួមមានមន្ត្រីមកពីនាយកដ្ឋានប្រែប្រួលអាកាសធាតុ ក្រុមការងារបច្ចេកទេសគម្រោងTA នៃកម្មវិធីយុទ្ធសាស្ត្រសម្រាប់ភាពធន់នឹងអាកាសធាតុ កម្មវិធីសម្ព័ន្ធភាពប្រែប្រួលអាកាសធាតុកម្ពុជា និងអង្គការផ្នែកអន្តរជាតិ។
- គណៈកម្មការ ជ្រើសរើសករណីសិក្សាល្អពីការបន្ទុំដើម្បីដាក់តាំងបង្ហាញនៅក្នុងសិក្ខាសាលាចែករំលែកចំណេះដឹងស្តីពីការឆ្លើយតបនឹងការប្រែប្រួលអាកាសធាតុកម្ពុជា និងបោះពុម្ពជាផ្ទាំងផ្សព្វផ្សាយធំៗ
- ករណីសិក្សាទាំងអស់ដែលត្រូវបានជ្រើសរើសនឹងត្រូវបានចងក្រងបោះពុម្ពជាសៀវភៅ (មានបញ្ជាក់ឈ្មោះអ្នកនិពន្ធ/ប្រភព)។



# លក្ខខណ្ឌនៃការជ្រើសរើស

## ១. ការអនុវត្តជាលក្ខណៈប្រពៃណី/ជនជាតិដើមភាគតិចដើម្បីបន្តនឹងការប្រែប្រួលអាកាសធាតុ និងកាត់បន្ថយហានិភ័យគ្រោះមហន្តរាយ

- ករណីសិក្សាអាចជារចនាសម្ព័ន្ធ បច្ចេកទេស ឬការអនុវត្តរបស់ប្រជាជនក្នុងសហគមន៍ដើម្បីរៀបចំឬគ្រប់គ្រងហេដ្ឋារចនាសម្ព័ន្ធ ធនធានធម្មជាតិ ជីវភាពរស់នៅ ឬការពារគ្រោះមហន្តរាយធំៗ ( ទឹកជំនន់ គ្រោះរាំងស្ងួត ខ្យល់ព្យុះ )
- អាចជាវិធានការដែលប្រជាជនក្នុងសហគមន៍បានចាប់ផ្តើមបង្កើតដោយខ្លួនឯងដើម្បីឆ្លើយតបការកើនឡើងកម្ដៅ ឬការប្រែប្រួលរបបទឹកភ្លៀង
- ប្រធានបទអាចគ្របដណ្តប់លើវិស័យដូចជា៖ កសិកម្ម ធនធានទឹក ហេដ្ឋារចនាសម្ព័ន្ធអភិវឌ្ឍក្រុង និងការដឹកជញ្ជូន សុខភាព ជាដើម

## ២. ការអនុវត្តដែលផ្សព្វផ្សាយពីភាពធន់នឹងអាកាសធាតុ និងលើកកម្ពស់ស្ត្រី កុមារ និងយុវវ័យ

- ករណីសិក្សាការអនុវត្តបន្តនឹងការប្រែប្រួលអាកាសធាតុក្នុងសហគមន៍ដែលជាពិសេសជួយបង្កើនជីវភាពរស់នៅរបស់ស្ត្រី កុមារ យុវជន ឬកាត់បន្ថយភាពងាយរងគ្រោះនឹងការប្រែប្រួលអាកាសធាតុ
- គួរតែជាឧទាហរណ៍ដែលត្រូវបានអនុវត្ត ឬបង្កើតឡើងបន្ថែមទៀតដើម្បីបង្កើនភាពធន់នឹងអាកាសធាតុ និងកាត់បន្ថយហានិភ័យគ្រោះមហន្តរាយដល់ស្ត្រី កុមារ និងយុវវ័យ



# លក្ខខណ្ឌនៃការជ្រើសរើស

## - បទបង្ហាញ

- ការសរសេរល្អ ក្រាហ្វិកពន្យល់ ការពិពណ៌នាច្បាស់លាស់

## - ការពាក់ព័ន្ធ

- ស្របនឹងប្រធានបទ ការបន្សុំដែលដោះស្រាយឆ្លើយតបនឹង ការប្រែប្រួលអាកាសធាតុ សមស្របសម្រាប់សហគមន៍នៅកម្ពុជា

## - មាតិកា

- ភាពច្នៃប្រឌិត អាចចម្លងតាម យេនឌ័រ និងដំណោះស្រាយដល់ក្រុម ងាយរងគ្រោះ



# លទ្ធផលនៃបញ្ជីជ្រើសរើស

- ទទួលបានការផ្ញើករណីសិក្សាការអនុវត្តបន្ទុំចំនួន ២០
- ការអនុវត្តចំនួន១១ត្រូវបានជ្រើសរើស និង១ជាឧទាហរណ៍សម្រាប់ការដាក់តាំងបង្ហាញនៅក្នុងវេទិកា
  - ការអនុវត្តបន្ទុំជាលក្ខណៈប្រពៃណី/ជនជាតិដើមភាគតិចមានចំនួន៦
  - ការអនុវត្តដែលផ្សព្វផ្សាយពីភាពធន់នឹងអាកាសធាតុ និងលើកកម្ពស់ស្ត្រីកុមារ និងយុវវ័យមានចំនួន៦
- ក្នុងចំណោមបញ្ជីជ្រើសរើស ករណីសិក្សាការអនុវត្តបន្ទុំចំនួន៥ និងត្រូវធ្វើបទបង្ហាញ



# បញ្ជីជ្រើសរើស

១. ការអភិរក្សព្រៃឫស្សី និងវាលស្សរសម្រាប់ជនជាតិដើមភាគតិច ក្នុងការបន្តនិងការប្រែប្រួលអាកាសធាតុ

២. ការត្រងទឹកភ្លៀងនៅជនបទក្នុងប្រទេសកម្ពុជា

៣. ការចិញ្ចឹមមាន់ពូជក្នុងស្រុកតាមបច្ចេកទេសបន្តនិងការប្រែប្រួលអាកាសធាតុ

៤. បច្ចេកទេសសម្បត្តិសុវត្ថិភាពដោយថាមពលព្រះអាទិត្យ ប្រកបដោយប្រសិទ្ធភាព និងរន្តរភាព និង អនាម័យ របស់សហគមន៍នេសាទ ចាន់ ហិន ក្នុងខេត្តកំពត

៥. ការផ្ទេរចំណេះដឹងអំពីអេកូឡូស៊ីកសិកម្មដល់យុវជន និងយុវនារីនៅប៉ែកពាយ័ព្យនៃប្រទេសកម្ពុជា

៦. ការបង្កើតឡើងវិញនៃដើមកោងកាង ជាវិធានការបន្តនិងទទួលបានផលប្រយោជន៍សម្រាប់ស្ត្រី និងជា យុវជនក្នុងសហគមន៍នេសាទភូមិត្រពាំងសង្កែ

៧. ការប្រើប្រភពទឹកច្រប់ធម្មជាតិធ្វើស្រែប្រាំងតាមបែបប្រពៃណីជនជាតិដើមភាគតិចចារ៉ាយ ក្នុងភូមិវាលវាលលែង ខេត្តរតនគិរី

៨. ការដាំដំណាំចំណីសត្វដែលធន់នឹងអាកាសធាតុនៅភូមិពន្លាកខេត្តត្បូងឃ្មុំ

៩. ការប្តូរពូជស្រូវសម្រាប់ការបន្តនិងការប្រែប្រួលអាកាសធាតុ

១០. ការបញ្ជ្រាបការប្រែប្រួលអាកាសធាតុទៅក្នុងកម្មវិធីសិក្សានៅសាកលវិទ្យាល័យ និងសហគមន៍

១១. ប្រព័ន្ធកសិកម្មចម្រុះ លក្ខណៈគ្រួសារដោយប្រើប្រាស់កាកសំណល់ឡដីវឌ្ឍន៍ក្នុងភូមិព្រៃធំ ខេត្តកំពត



National Council for Sustainable Development

**LOCAL CHICKEN FARMING TECHNIQUE TO ADAPT TO CLIMATE CHANGE**

- A local chicken farming technique adopted by the communities on Koulen mountain, Koulen commune, Svay Leu District, Siem Reap Province has become the third most important source of income for villagers after rice and cashew nut farming.
- Almost 60% of households who joined the project earned additional income from the local chicken farming practice. Each household can collect their chicken for sale at 3-4 times per year at average income of 62-72US\$ per time. There is a good market for local chicken, middle men come to buy at village at 3-3.5US\$/kg for supplying to markets in Siem Reap town.
- Under this technique, local chickens are grown and fed in cage. The cages for keeping chickens are 2x3m. In addition, a closed in area for chickens to walk and feed is built with a minimum size of 10x10m. Cages are placed in an appropriate area such as the backyard or under trees. Cages are made from small pieces of wood from the community forest with a height of 1.5-2.0m.
- With this technique, chickens grow faster being ready for sale after 3-4 months only, depending on the care given (such as vaccinating) and giving the right amount of food and water.

CAMBODIA



Forest protected community on Koulen mountain in Koulen commune, Svay Leu District, Siem Reap Province.

CAMBODIA



Chanthoan Fishery Community is located in Kampot province. It is composed of around 10 families.

- ASSIST ASIA Phone: +855 (0) 10 690 498 Email: Mathisa@assistasia.org
- Chanthoan Fishery Community is led by a woman, Ms Chey Sopha. She is managing the Solar dryer by herself with the help of her family. She provides a service to other families to dry shrimps and fishes. Around 10 families from the neighborhood are using this technology.
- She has been using this drier since 2013. Such driers are rare in Cambodia - only 4 other solar driers have been found in the whole country.
- Climate change has affected both fishing and farming activities, essential to Chanthoan Fishery Community as they are mostly drying shrimps and fishes.
- Frequent heavy rain and storms but also long drought periods in recent years have led to difficulties using the ancient technique of open sun drying.
- Thanks to the Solar Dryer, the community can tackle Climate Change issues, increase product's quality and limit post-harvest losses.
- The pilot solar drier improves performance of drying and the quality of the product by drying more quickly and in more hygienic conditions than conventional open sun drying.
- Successful implementation of the project encourages the installation of solar dryers for SMEs at the community level. This practice also aims at empowering women as the community is led by women.
- By improving the process and preventing post-harvest loss, this initiative helps the community to reduce costs, generate more earnings, and eventually grow as businesses.
- By improving the process and preventing post-harvest loss, this initiative helps the community to reduce costs, generate more earnings, and eventually grow their businesses.
- It enhances the quality and global marketability of the dried products, providing the local industry great opportunities for export. In the long-term, this kind of practice could create more jobs and help uplift the lives of people in the community.
- It creates a venue for collaboration and women empowerment, within the community and between the small investors and cooperatives, moving towards more sustainable growth.
- To extend these benefits to other communities, Chanthoan Fishery Community could act as an ambassador to demonstrate to other communities that the solar drier is efficient both environmentally and economically.
- Initial financial investment is the main limitation of such a solar drier.
- Chanthoan Fishery Community was equipped with their solar drier as part of a funded project, a Public-Private Partnership between the German Government and Bayer, a Global enterprise with core competencies in the fields of health care, nutrition and high-tech materials. This project was implemented by the capacity building organization, ASSIST.
- Higher than 10,000 US\$



National Council for Sustainable Development

**CONSERVING BAMBOO FOREST AND HATCH MEADOWS FOR INDIGENOUS PEOPLE GROUPS TO ADAPT TO CLIMATE CHANGE**

- The Buning are an aboriginal Cambodian minority ethnic group, living primarily in Mondulkiri province. They are the largest indigenous highland ethnic group in Cambodia with their own language called Phnong.
- Buning people traditionally build turtle shell-shaped house made with a bamboo structure and thatch roofing although there is plenty of hardwood available.
- Often, the settlements are on upper slopes far from their farming areas which are on the lowest slopes of the hills and close to streams. For convenience of watering crops and animals. Traditionally, they also build a farm-house which is made of a stronger wood structure, completely different from village turtle shell-shaped house.
- Buning are traditionally mobile people due to their farming practices, and bamboo and thatch are ideal materials for house building because they are of light construction and with easy access of bamboo and thatch they can rebuild in fast way.
- Traditionally most of the Buning villages are located near to bamboo forests.
- Their wooden farm houses on lower slopes near water-stream, are often swept away by flash-floods, and this experience of disasters has led to the traditional practice it is more adaptive to build a light-structure house.
- The use of bamboo and thatch is an adaptation to the local environment giving them greater resilience to climate change and disaster risk reduction.
- Bamboo forest and hatch meadow are important for Buning people and they traditionally see the value and the need to manage the resource sustainably and protect it.

CAMBODIA



- Kat Bun Hong Sex: Male Phone: 012 974228 Email: kat.bunhong@gmail.com
- The conservation of bamboo forest and meadows has never been formal but has relied on traditional practice from ancient times.
- The Buning people understand how to extract bamboo stalks and bamboo shoots in a sustainable way and thatch is harvested at certain times of the year.
- The sustainable use involves the whole community. Elderly people would have a say on how and how much bamboo stalks can be harvested while women know what is the best time to harvest thatch for roofing their houses.
- Currently, bamboo forest conservation may be part of Community Forests or CPA for protected forest under the law, but because of its importance to indigenous peoples, the conservation of bamboo forest and meadows should be reflected as a separate ecosystem at the formal and legal level.
- So far, there is no formal research or study on how meadows or fallow hilly land benefits indigenous people or their ecosystem. Meadows play a vital role in the context of climate change. Local indigenous knowledge shows that meadows (long thatch) can protect slopes from erosion and land slides.
- Bamboo forest and meadows are one of the traditional resources for indigenous people to adapt to their environment and the increased risks of disaster due to climate change.
- Indigenous people in Mondulkiri choose their farm where bamboo forest can be a natural fence protecting their crops from storm or strong wind.
- The knowledge of sustainable management of bamboo forest and meadow protection is in decline due to separation of commercial farming, even among indigenous people.
- The degradation of bamboo forests and meadows will eventually lead to more frequent disasters such as soil erosion and land slides in the future.
- Formal conservation measures will allow bamboo forest and meadows to regenerate naturally.
- This can provide indigenous people with bamboo and thatch for housing and other daily use. These are critical resources for them to adapt to climate change.
- Loss of bamboo and thatch resources dramatically reduces their capacity to adapt to climate change.
- Formal conservation of bamboo forest and thatch meadows can assist indigenous people including women to be able to adapt to climate change and disaster.
- Bamboo shoots are also collected from the forest as a food-sources for indigenous people.
- There are no legally designated bamboo forest areas or protected meadow areas.
- Higher than 10,000 US\$



National Council for Sustainable Development

**ADAPTATION OF TRADITIONAL RAISING OF GREEN MUSSELS IN COASTAL COMMUNITIES IN KOH KONG PROVINCE**

- Green mussel (Perna viridis) farming in Koh Kong Province has emerged as a sustainable income alternative after the collapse of shrimp farming.
- About 80% of households in the commune raise green mussels in the rich mangrove area due to its high potential for this activity.
- This activity alone accounts for almost 80% of the fishing household's annual income
- Production area: 0.5-1 ha of the mangrove areas salty creeks. Fishers plant trees throughout the areas with a spacing of about 5m between pillars.
- Cultivation period: 12 months Yields around 10-15 tons/ha.
- Market: Thailand Price: 2,000 Riel (about 0.5US\$) per kg.

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Peam Krasop is a coastal commune in Koh Kong Province, comprising 3 villages.

- 330 households in Peam Krasop that depend mainly on fishing with some farming, animal raising, small trade and working as labourers.
- In the last few years, fishermen have noticed a dramatic decrease in green mussels harvesting compared with earlier years.
- Some problems in production during the rainy season from June to August but increasingly in the last few years, green mussels started to die in November, when there is no rain.
- Reason for this fall in production is not know but, some fishermen reported that monsoon rains in recent years have been longer than normal, accompanied by higher temperatures.
- Innovative ways fishers coped with climate variability, and seasonal changes in temperature and rainfall, started to grow green mussel in deeper areas so the cultivars can be protected from high temperatures and freshwater intrusion.
- Some local producers have been trying to find places with 10-15 meters depth to raise green mussels, in order to reduce risk associated with any environmental variability.
- Allows fishermen to earn more income: annual income from green mussel raising for fishermen with one hectare of mussel pillars is about 6-8,000 US\$ a year.
- Provides alternatives to fishing and farming
- Based on local knowledge and so adaptation can be easily made by those in the local area.
- Most of fishermen do not have ownership rights over the areas where they are growing mussels.
- Increased population and development in the area is likely to increase competition for creek areas.
- Solution: local and provincial government need to work with local community to ensure continued access to this livelihood activity.
- 1001 to 10,000 US\$



TA-8179 MCRDP



# ការជ្រើសរើសចំនួន៥សម្រាប់បទបង្ហាញ

## ១. ការអនុវត្តជាលក្ខណៈប្រពៃណី/ជនជាតិដើមភាគតិចដើម្បីបន្សំនឹងការប្រែប្រួលអាកាសធាតុ និងកាត់បន្ថយហានិភ័យគ្រោះមហន្តរាយ

1. ការអភិរក្សព្រៃឫស្សី និងវាលស្បូវសម្រាប់ជនជាតិដើមភាគតិច ក្នុងការបន្សំនឹងការប្រែប្រួលអាកាសធាតុ
2. ការត្រងទឹកភ្លៀងនៅជនបទក្នុងប្រទេសកម្ពុជា
3. ការចិញ្ចឹមមាន់ពូជក្នុងស្រុកតាមបច្ចេកទេសបន្សំនឹងការប្រែប្រួលអាកាសធាតុ
4. ការប្រើប្រភពទឹកច្រប់ធម្មជាតិធ្វើស្រែប្រាំងតាមបែបប្រពៃណីជនជាតិដើមភាគតិច ចារ៉ាយក្នុងភូមិ ជាលំដាប់លែង ខេត្ត រតនគិរី។

## ២. ការអនុវត្តដែលផ្សព្វផ្សាយពីភាពធន់នឹងអាកាសធាតុ និងលើកកម្ពស់ស្ត្រី កុមារ និងយុវវ័យ

5. បច្ចេកទេសសម្បត្តិសុវត្ថិភាពដោយថាមពលព្រះអាទិត្យ ប្រកបដោយប្រសិទ្ធភាព និរន្តរភាព និង អនាម័យរបស់សហគមន៍នេសាទ ចាន់ ហិន ក្នុងខេត្តកំពត





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# សូមអរគុណ



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