



# ALISEA REVIEW OF EXISTING PEDAGOGICAL MATERIALS AND INITIATIVES FOR MAINSTREAMING AGROECOLOGY PRACTICES IN LAOS



## Pedagogical resources in Agroecology & Conservation Agriculture

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# Scientific, technical and social ‘complexity’

- Cropping and farming systems design, agricultural engineering, landscape ...
- Biological/ecological assessment: soil health, plant diversity functions and services...
- The knowledge and the learning process: availability, field and observation, pluri-disciplinarity (agronomy – ecology – social sciences)
- Innovation process: higher levels of technical and social complexity



# 5 Challenges to teach Agroecology online

- Need to enhance the interdisciplinary and interactivity through the connections between Field – Research and Teaching
- To provide learners with a large range of **learning situations** (theory, testimonials, case study...)
- To provide learners with an **online learning path** and an **online learning environment**
- To provide teachers with **online teaching tools** (ex: online assessments & tracking system)
- To **co-design** online courses content between teachers, scientists, development actors, smallholders: technical – academic

# INFORMATION AND COMMUNICATION TECHNOLOGY TOOL USES

Many ICT tools have been appropriate in order to:

## ❑ BUILD THE CONTENT

- **Scenarichain** as a authoring tool (open source)
- **Scenarserver** as collaborative authoring tool

## ❑ MUTUALIZE PEDAGOGICAL CONTENT & ITC USAGES

- **Content Management System** (Wordpress) broadcasting e-learning courses & numeric teaching content material (iperca.org)
- **Youtube** as a video broadcasting tool for tutorial and video content involved in the courses

YouTube



# A CMS to mutualize and broadcast teaching materials – clips and pictures

The screenshot displays the website [www.iperca.org](http://www.iperca.org) with a dark header and a green navigation sidebar. The main content area features a large heading "WELCOME TO THE ONLINE LIBRARY" and a paragraph describing the library's purpose: "The library promotes numeric learning contents in the field of agroecology and Conservation agriculture. These resources are developed through Iperca project (Innovative Learning Agriculture for Cambodia) Foundation." Below this, it lists partner institutions: "Royal University of Agriculture (RUA, Cambodia), the University of Battambang (Cambodia), Montpellier SupAgro, the General Directorate of Agriculture (GDA, Cambodia), and the Centre de Coopération Internationale en Recherche Agronomique pour le Développement (CIRAD)." A second paragraph states: "The library contains e-learning courses designed by the partners of the project, and other pedagogical resources (i.e., pictures, clips)." On the right, there is a "WHO IS ONLINE?" section with a "WordPress database error" message and a "PICK UP A TOPIC!" section with tags like "biomass", "cambodia", "cassava", "Conservation", "Agriculture", "com", "cover".

**Navigation Menu (Left Sidebar):**

- WELCOME TO IPERCA.ORG
- RUA E-LEARNING NEWS
- E-LEARNING COURSES (BÊTA)
- PEAGOGICAL USES OF ITC
  - SAMPLES
  - TO REWORD
  - TO QUIZ
  - TO EXPLAIN
  - TO ASSESS ONLINE
  - TO PLAY (GAMIFICATION)
  - TO MATCH
  - TO FEEDBACK
  - TO CALCULATE
  - TO SURVEY (STUDENT'S REPRESENTATION)
- E-LEARNING PLATFORM
- TEACHING MATERIAL
- DOCUMENTARIES
- LAB ZONE
- YOUTUBE

**Main Content:**

## WELCOME TO THE ONLINE LIBRARY

The library promotes numeric learning contents in the field of agroecology and Conservation agriculture. These resources are developed through Iperca project (Innovative Learning Agriculture for Cambodia) Foundation.

Royal University of Agriculture (RUA, Cambodia), the University of Battambang (Cambodia), Montpellier SupAgro, the General Directorate of Agriculture (GDA, Cambodia), and the Centre de Coopération Internationale en Recherche Agronomique pour le Développement (CIRAD).

The library contains e-learning courses designed by the partners of the project, and other pedagogical resources (i.e., pictures, clips).

**WHO IS ONLINE ?**

WordPress database error: [You have an error in your SQL syntax; check the manual that corresponds to your MySQL server version for the right syntax to use near '1' at line 1]

0 0 4 0 2 4 2

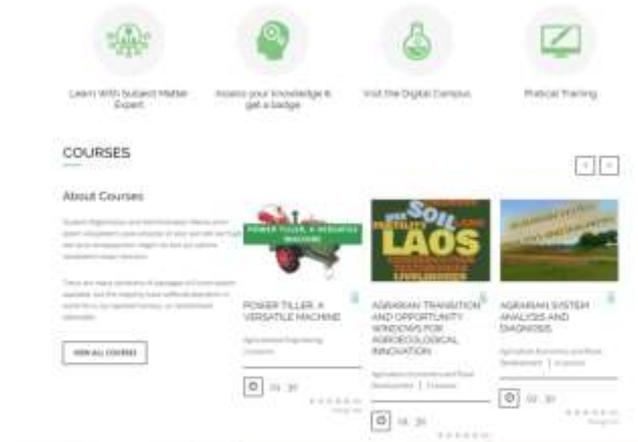
Visit Yesterday : 202
This Month : 1753
Who's Online : 7

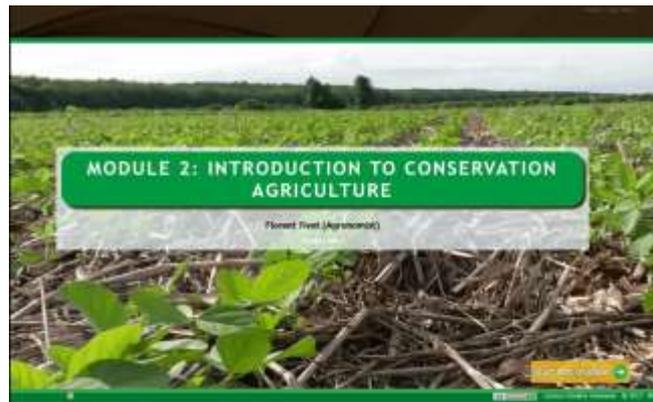
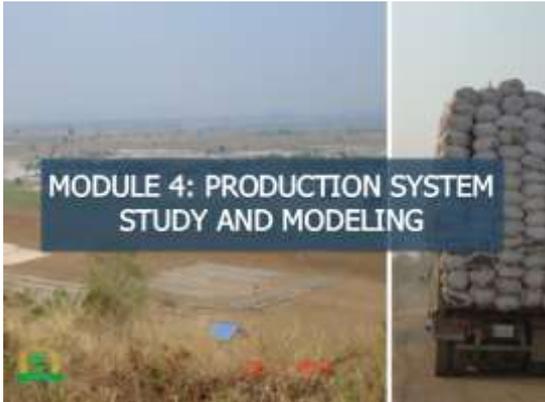
**PICK UP A TOPIC !**

biomass cambodia cassava  
Chisel Conservation  
Agriculture com cover

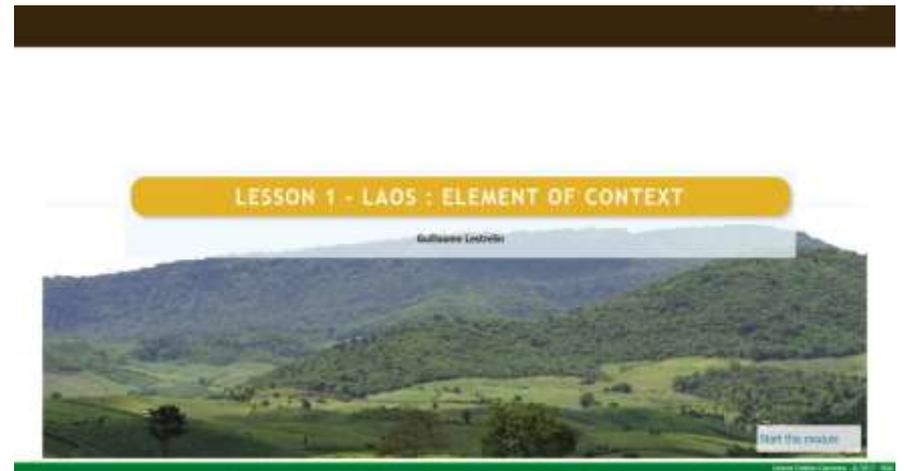
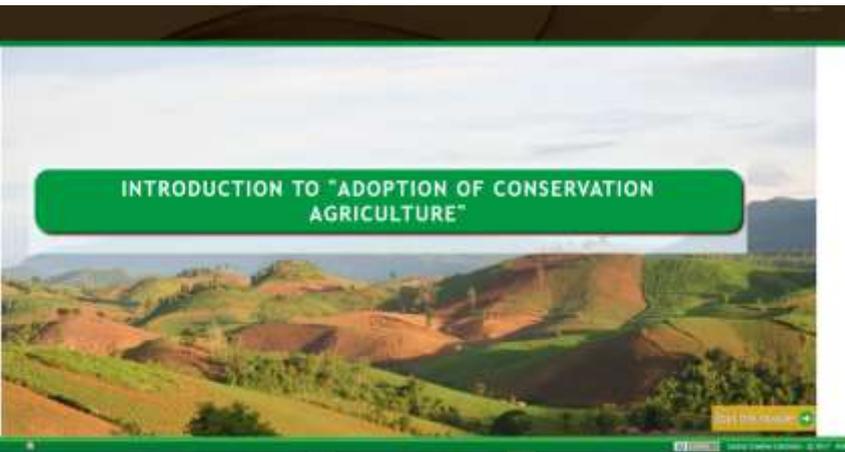
## ❑ TO DISSEMINATE LEARNING RESOURCES

- **LCMS E-learning platform:** [e-learning.rua.edu.kh](http://e-learning.rua.edu.kh)
- **Social network** as such as Facebook (RUA online course & CA service center groups)
- **QR code** on technical leaflets and signs on the campus

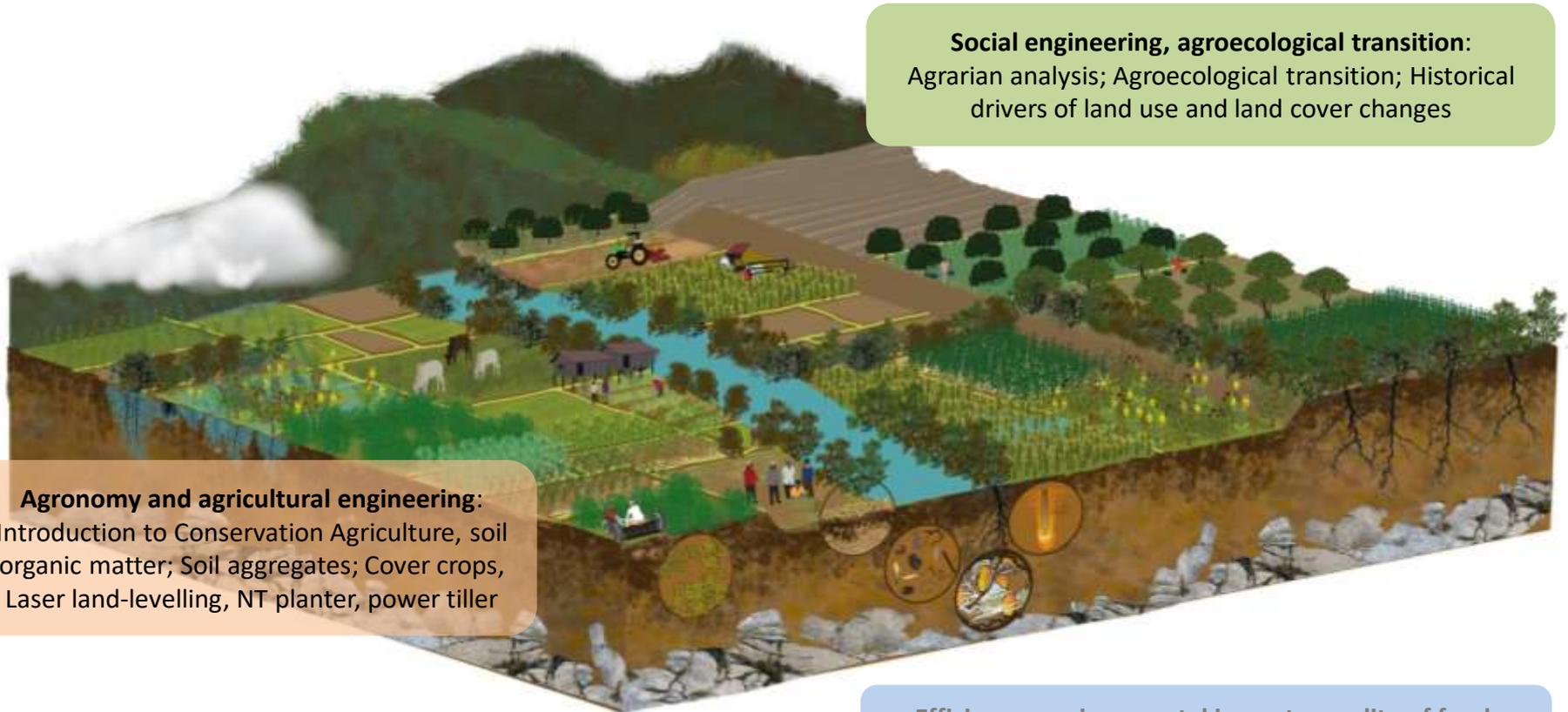




# IPERCA : FOCUS ON COURSES DESIGN



- 2 main dimensions (12 courses, 30 modules)

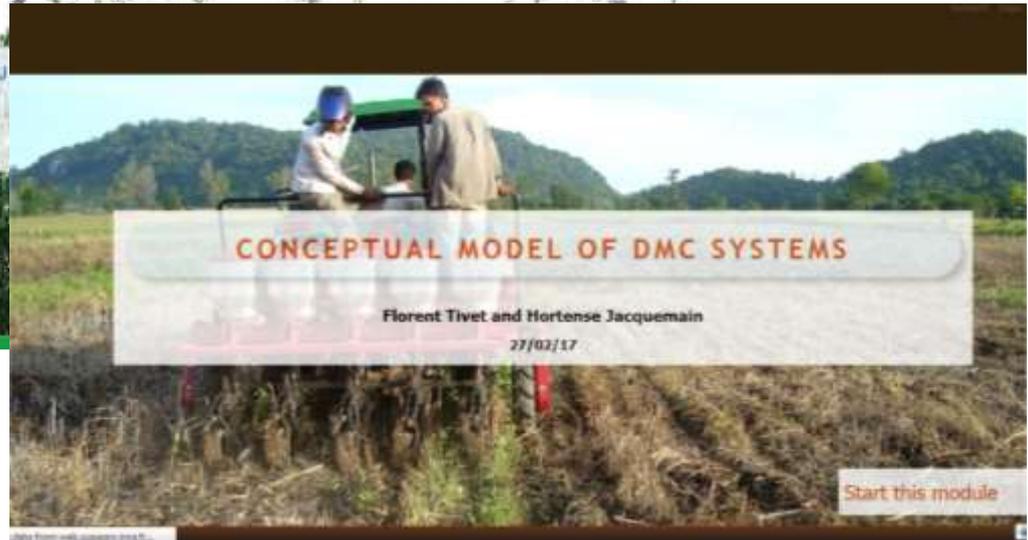


**Social engineering, agroecological transition:**  
Agrarian analysis; Agroecological transition; Historical drivers of land use and land cover changes

**Agronomy and agricultural engineering:**  
Introduction to Conservation Agriculture, soil organic matter; Soil aggregates; Cover crops, Laser land-leveling, NT planter, power tiller

Efficiency, environmental impacts, quality of food, water

# ONE COURSE = SEVERAL MODULES



# Example of E-learning course: Land Use and Cover Change

The screenshot shows a web interface for an e-learning platform. At the top, there is a navigation bar with links for HOME, COURSES, MY DIGITAL CAMPUS, TEACHERS, and FAQs. A user profile is visible with the name 'David' and a 'Logout' option. Below the navigation bar, there are filter options for 'Filter by', 'Choose Category', and 'Choose Class', along with buttons for 'ALL', 'PAID', and 'FREE'. A grid of course cards is displayed, each with a thumbnail image, title, instructor, duration, and rating. The courses include 'POWER TILLER, A VERSATILE MACHINE', 'USE SOIL CHANGES FERTILITY LAOS CONSERVATION TESTIMONIES LIVELIHOODS', 'AGRARIAN SYSTEM ANALYSIS AND DIAGNOSIS', 'LASER LAND LEVELING', 'ASSESS YOUR KNOWLEDGE', and 'LAND USE AND LAND COVER CHANGES, NORTHWESTERN UPLANDS OF CAMBODIA'. An arrow points from the 'LAND USE AND LAND COVER CHANGES' card to a larger view of the course on the right.



## LAND USE AND LAND COVER CHANGES, NORTHWESTERN UPLANDS OF CAMBODIA

Agricultural Economics and Rural Development

3 Lessons

01:10 (1 votes, average: 5.00 out of 5)

LEARNING PATH: FROM E-LEARNING PLATFORM TO COURSE



# E-learning: course's interface

OBJECTIVES

INTRODUCTION

COURSE MENU

REQUIREMENTS

LEARNING TIME

The screenshot shows a course interface with a dark green header containing the title "LAND USE AND LAND COVER CHANGES, A CASE STUDY FROM NORTHWESTERN UPLANDS". Below the header is a navigation menu with items: "Objectives", "Study case description", "Introduction", "PART I: Changes of land use and land cover (LULC)", "PART II: Process of land use and land cover changes", "PART III: Proximate causes, underlying factors, and their linkages", and "Conclusion of the case study". A video player is embedded, showing a man in a white shirt and glasses holding a play button icon. Below the video, there is a "Pre-requisite" section stating that there are no specific prerequisites, and a "Required time" section listing the duration for Part I (20mn) and Part II (30mn). A small image of a landscape cross-section is visible on the left side of the content area.

# Drag and drop: a pedagogical usage of ITC

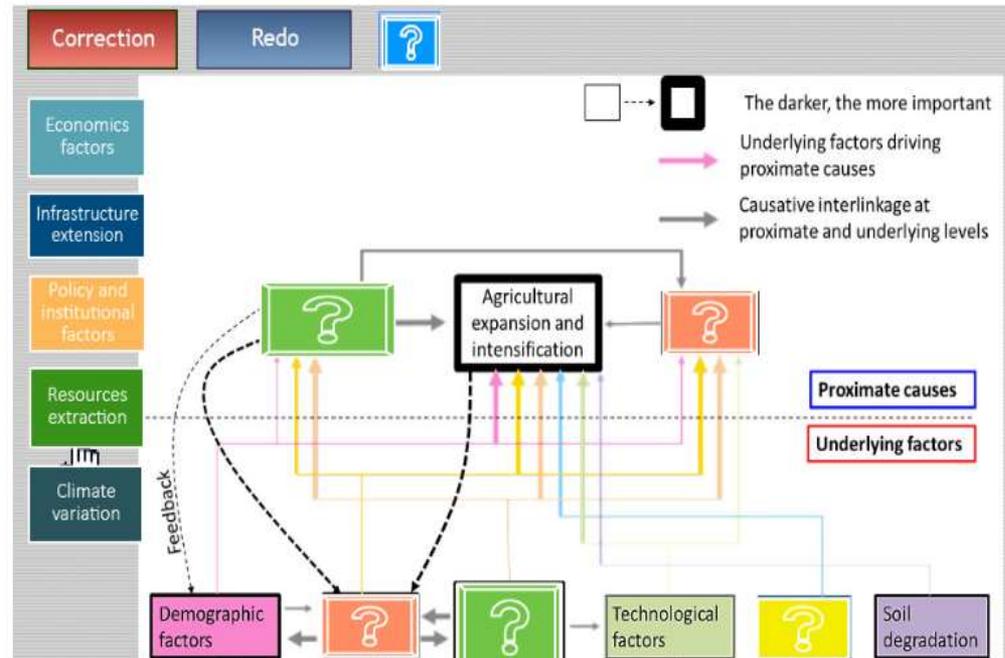
- Objectives
- Study case description
- Introduction
- PART I : Changes of land use and land cover (LULC)
- PART II : Process of land use and land cover changes
- PART III : Proximate causes, underlying factors, and their linkages
  - Introduction
  - Definition
  - 3 major proximate causes
  - Underlying factors
  - Linkages of proximate causes and underlying factors
- Conclusion
- Conclusion of the case study

## Linkages of proximate causes and underlying factors

The past studies on deforestation in the tropical regions showed that there are not multiple proximate causes and underlying factors, but also in most cases the interactions of multiple underlying factors drive multiple proximate causes.

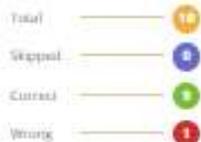
- In this case study, **political and territorial strategies** to integrate Khmer Rouge to end the long standing civil wars in Cambodia, the need for socio-economic development for the demobilized military forces drove agricultural expansion and intensification and the improvement of **roads infrastructure** in the Northwestern regions.
- Access to **agricultural technologies** such agro-chemicals and machineries, high variation of rainfall and **soil degradation** led to the changes of land use for instance shifting from annual upland crops to longan. These two kinds of fruit trees sustain very well with depleted soil and drought. Furthermore, it could be stimulated the production using agro-chemicals to schedule the harvest at premium price.

Based on previous contents, select a colored box on the left side and drag it to its right location on the graphic. Once you've finished, click on the "correction" button at the bottom of the graphic.



# Online assessment on the platform

This is an assessment. Fill the following quiz and get a score.



1 The combined underlying factors drove the agricultural expansion and intensification include:

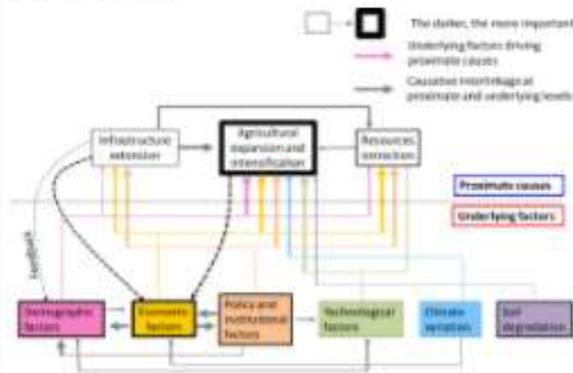
Your Answer

- Policy, institution and technology
- Demography and economy
- Demography, economy, policy, institution, and technology
- Policy, institution, and economy

Correct Answer

- Policy, institution and technology
- Demography and economy
- Demography, economy, policy, institution, and technology
- Policy, institution, and economy

Answer Explanation:



The score is saved on the platform. Students can have access to their scores by their personal dashboard.

Teacher have access to the score of students

After assessment, the correction of the quizz gives a feedback related to the answer

# Technical leaflets, a use of QRC for enhancing the learning process → Facebook, e-learning

The image displays a collection of technical leaflets from CIRAD, presented in Khmer. The leaflets cover various agricultural topics, including:

- Top Left:** A leaflet with a QR code and text about agricultural services.
- Top Center:** A leaflet titled "ប្រកួតប្រជែងការងារកសិកម្ម" (Competition for Agricultural Work) with a QR code.
- Top Right:** A leaflet titled "វិធីសាស្ត្រការងារកសិកម្ម" (Agricultural Work Methods) with a QR code.
- Middle Left:** A leaflet titled "វិធីសាស្ត្រការងារកសិកម្ម" (Agricultural Work Methods) with a QR code.
- Middle Center:** A leaflet titled "វិធីសាស្ត្រការងារកសិកម្ម" (Agricultural Work Methods) with a QR code.
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- Bottom Left:** A leaflet titled "វិធីសាស្ត្រការងារកសិកម្ម" (Agricultural Work Methods) with a QR code.
- Bottom Center:** A leaflet titled "វិធីសាស្ត្រការងារកសិកម្ម" (Agricultural Work Methods) with a QR code.
- Bottom Right:** A leaflet titled "វិធីសាស្ត្រការងារកសិកម្ម" (Agricultural Work Methods) with a QR code.

A red circle highlights a QR code on the left side of the collage, which is linked to a Facebook page. The QR code is located on a leaflet titled "វិធីសាស្ត្រការងារកសិកម្ម" (Agricultural Work Methods).

# Fostering the development of e-learning resources



- ITC leader in Cambodia for the development of e-learning resources
- MoU between ITC and RUA, technical support (developing resources, LMS platform ...)
- Regional project with Cambodia, Laos and Vietnam (KOICA)



# A REFLECTION ON THE USAGES OF ICT FOR TEACHING AGROECOLOGY ONLINE

- How to engage the community of professors/lecturers?
- How to use the ICT: blended-learning, complementary to face-to-face teaching...?
- Which added-value of ICT?
- Co-design of the resources

→ Next event in Phnom Penh on September with the main objective to discuss the use of ICT in agroecology, how to engage different communities, to make an efficient use of the ICT, draw a roadmap for a design of e-learning resources bringing together regional partners?

Platform e-learning of RUA  
<http://www.e-learning.rua.edu.kh/>

**WELCOME TO E-LEARNING**  
ROYAL UNIVERSITY OF AGRICULTURE

Learn With Subject Matter Expert | Access your knowledge & get a badge | Visit the Digital Campus | Practical Training

**COURSES**

About Courses

Student Registration and Administration Reminders

There are many variations of passages of Lorem Ipsum available, but the majority have suffered alteration in some form, by injected humour, or randomised words.

**VIEW ALL COURSES**

- POWER TILLER, A VERSATILE MACHINE**  
Agricultural Engineering | 3 Lessons | 01:30
- AGRARIAN TRANSITION AND OPPORTUNITY WINDOWS FOR AGROECOLOGICAL INNOVATION**  
Agriculture Economics and Rural Development | 3 Lessons | 01:30
- AGRARIAN SYSTEM ANALYSIS AND DIAGNOSIS**  
Agriculture Economics and Rural Development | 4 Lessons | 02:30

Thank you for your attention!

<http://casc.cirad.fr/>

**Case**  
FERRISBURG (KOR) WASS FOR RESILIENT TRAINING IN CAMBODIA

Ecological sustainability | Plant diversity | Small-scale Machinery | Research studies | Training & Education

<http://www.iperca.org/>

Network learning contents to teach Agroecology and Conservation Agriculture

**WELCOME TO THE ONLINE LIBRARY**

The library provides generic learning contents in the field of Agroecology and Conservation agriculture. These resources are developed through Iperca project (Innovative Pedagogical Resources in Conservation Agriculture for South-East Asia) funded by the Agropolis Foundation.

**WELCOME ONLINE**

2 lessons available  
Map of library  
Responsible editor: Iperca

**PERCA TOPIC**

www.CASAPV2.com/Conser

CONTACT :  
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E-learning platform admin: [vichet.rua@gmail.com](mailto:vichet.rua@gmail.com)  
E-learning facilitator : [davidwissocq@yahoo.fr](mailto:davidwissocq@yahoo.fr)  
Director of RUA ITC center : [admin@rua.edu.kh](mailto:admin@rua.edu.kh)