Challenges to develop educational resources and to teach agroecology: the MOOC agroecology

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Challenges: agroecology & e-learning

How to build capacities to support agroecological transition, for which the use of ecological processes is a key point for increasing productivity, supplying ecological services and reducing inputs?

- What knowledge do actors / students require to understand and make use of ecological processes?
- How are these ecological processes modified by crop management practices, and how can they be optimised?
- Which innovations (technical, social, organisational) are necessary to facilitate the related change in practices, technical systems and professional social networks?
- How can these innovations be introduced into rapidly evolving production systems?
- How can training and research best develop the acquisition of knowledge and accompany change, to contribute to sustainable agricultural development?

Agroecology is knowledge intensive
Challenges: agroecology & e-learning

- Needs for (massive, accessible) training and teaching on agroecology
- TIC: Digital native generation, internet access, smartphone…
- Need to include field, observation, experiences in the learning process
- Needs for peer learning
- Needs for partnership: interdisciplinarity, teachers – researchers – stakeholders, N-S, technical – academic

Numeric learning contents: a mean to address these issues?
TOWARDS A REGIONAL INITIATIVE TO DEVELOP E-LEARNING RESOURCES IN AGROECOLOGY

Our experiences

Projects:
- PEPITES (2009-2013): Ecological, technical and social innovation processes in conservation agriculture
- PAMPA (2012-2013): Programme d’appui multi-pays à l’agroécologie

MOOC agroécologie (agroecology since 2016)

E-learning strategy of Montpellier SupAgro
PARMI: Promoting Agroecology demands innovation in education

**CONSTRUCTION...**

- Management team (SDT, MLN, SC)
- Steering committee

**... and USES...**

- SupAgro ‘Parcours Agroecology’ (Dpt MPRS-BE-SESG)
- University – ESSA – LRI Antananarivo (Madagascar)
- UMR Innovation
- UMR CEFE
- UMR Eco&Sols
- UMR AGAP
- UMR System
- UR Aïda
- UR HortSys
- SupAgro Florac

**Database of numeric pedagogical contents**

- E-learning platform
- Frameworks for uses (face-to-face / distance learning)

**SupAgro Florac (SupAgro DEVE)**

**Summer school**

**Collaboration (North-South / higher-technical education)**

**Reverse pedagogy**

- Video recording
- xMOOC
- cMOOC

**Master SupAgro**

**MOOC Agroecology**

**Master, D school U. Antananarivo**

**Technical training**

**Interdisciplinarity / Education - Research**
TOWARDS A REGIONAL INITIATIVE TO DEVELOP E-LEARNING RESOURCES IN AGROECOLOGY

5 sequences

Sequence 1: the emergence of agroecology
Sequence 2: approaches to agroecology
Sequence 3: Implementation
Sequence 4: focus on students’ mini-reports
Sequence 5: the transition to agroecology

Newsletter
Forums and discussion groups
Live event
Social Network

Intercropping
Agroforestry
Horticulture
Hubandry

Mini-report

Discussion groups
Technical and pedagogical support

S1
S2
S3
S5

Mini-report

Social Network
TOWARDS A REGIONAL INITIATIVE TO DEVELOP E-LEARNING RESOURCES IN AGROECOLOGY

Key figures

- 12000 / 7500 + 750 participants
- 100 Countries
- 50 Students for tutoring
- 130 / 80 mini-reports

Age:
- < 20; 2%
- 20 à 30; 37%
- 30 à 40; 29%
- 40 à 50; 17%
- 50 à 60; 11%
- > 60; 4%

Occupation:
- employed; 70%
- unemployed; 15%
- student; 7%
- retired; 8%

Study level:
- master 61%
- Bachelor degree 20%
- secondary high school 11%
- phd 8%
TOWARDS A REGIONAL INITIATIVE TO DEVELOP E-LEARNING RESOURCES IN AGROECOLOGY

Key figures: participants location (french)
TOWARDS A REGIONAL INITIATIVE TO DEVELOP E-LEARNING RESOURCES IN AGROECOLOGY

Key figures: participants location (english)
TOWARDS A REGIONAL INITIATIVE TO DEVELOP E-LEARNING RESOURCES IN AGROECOLOGY

MOOC back office

- Institutional strengthening: SupAgro → Agreenium

Mooc team:
- 11 lecturer-researchers: agronomy, ecology, sociology, ethnology, soil biology, animal science, economy
- 1 journalist: political sciences
- 9 researchers (INRA, CIRAD, IRD, MNHN)
- 7 persons from TIC team SupAgro: 2 pedagogical engineers, web publisher, community manager, audio-visual technician, graphics designer, computer technician
TOWARDS A REGIONAL INITIATIVE TO DEVELOP E-LEARNING RESOURCES IN AGROECOLOGY

MOOC back office

- Blended learning: MOOC – Agroecology curricula of SupAgro
  - Taking advantage of the Mooc to build new capacities: community management, forum animation, communication (live events...)

- Business model (full costs):
  - Mooc design and implementation: 150 000 €
  - Mooc session animation: 15 000 €
  - ‘Blended’ animation: 1 500 €

- English (2017) and Spanish (2019) versions:
  - Translation
  - Resources substitution
  - Resources building
  - Mooc session animation
SupAgro e-learning strategy

- Design a new model
  - Educational innovation / added value: flipped classroom, blended learning, collaborative learning...
  - Business model: blended learning, SPOC...
- Focus on flagship themes: Agroecology...
- Strengthen international partnerships: higher education / research / development
- Build capacities on learning contents building and uses
- Enlarge target public... and take advantage of public diversity
E-learning: the game is changing

- For teaching
  - From numeric tools and contents to numeric culture
  - E-learning for pedagogical innovation
  - Open the access to knowledge

- For the institutions
  - Gain visibility by showing pedagogical know-how
  - E-learning to develop partnership
  - Business model/new opportunities