

# CIEA 2004

## Case Study Bhutan Documentation of Presentation

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**24th INTERNATIONAL COURSE ON VOCATIONAL EDUCATION  
AND TEACHING IN AGRICULTURE**

## 2. Bhutan - Some key figures

- Official name: Druk Yul (Land of the Thunder Dragon)
- Monarchy (with democratization and decentralization)
- Area 47'000 km<sup>2</sup>, mountainous terrain, difficult access to many areas, only 16% arable land
- from 200 masl to >7000 masl (Himalayas); extremes of agro-climatic zones (sub-tropical to alpine)
- Population 600 000 - 800 000 (various ethnic groups)
- Language: Dzongkha (Nepali, English)
- Religions: Bhuddism, Hinduism
- GDP: ca. 700\$ per capita

## 3. Natural Resources & Agriculture in Bhutan

- Ca. 70% under forest cover
- NRM Sector 34% , Hydropower ca. 10% of GNP
- Agricultural workforce ca. 75% of population
- Mostly small farm structures (82% of people < 4ha); subsistence farming, hill agriculture, mixed farming system, almost no mechanization
- Main crops: rice, maize, potato (wheat, millet, buckwheat, barley) and citrus fruit. For export: cardamom and various fruit; Livestock: cattle, yak, goats/sheep, pigs, poultry
- Overuse (close to settlements) vs. fallow in remote areas

## 4. Situation in Education in Bhutan

- Formal schooling started around 35 years ago
- Schooling language: English and Dzongkag
- School enrolment-rate 72% (primary), 46% (overall)
- Almost no opportunities of further education for early school leavers
- Limited opportunities for further education after 10/12th class, mostly aimed at RGoB service
- Youth unemployment developing fast
- Private sector no prominent employer (for Bhutanese)

## 5. Rural Learning - on the move....

### **Before 2000 - very limited options**

- a) farmers and early school leavers
  - Extension service only/mayor direct source of continued learning
  - rare trainings, also at Research Centres, not evenly distributed
- b) for 10/12 class graduates
  - Applied tertiary education NRM Sector monopolized by NRTI: one standard career (extensionist AG, AH, FO) only, all graduates to join civil service
  - BSc in Natural Science offered by Sherubtse, Curriculum imported from India

### **Since 2000 slowly increasing offers**

- 2000 First technical courses targeted at farmers in 2000 (Farm Business Training)
- 2002 Food Inspector Training taken up at NRTI
- 2003 Royal University of Bhutan => additional options of BSc and MSc NRM

### **At present - new offers being developed!**

## **6. Rural Learning and Education: Stakeholders and Offers (see slide 6 presentation)**

## **7. Characteristics of Existing and New Offers (see slide 7 –table in presentation)**

## **8. Educational Offers NRM Sector (see slide 8 presentation)**

## **9. Offers for Change Agents**

Diploma in Extension; Food Inspectors; In-service Training; BSc/MSc

## **(10. –13.) Diploma in Extension (existing)**

### **Description**

- Target group: XII class pass (Science), good communication skills
- 2 years; three specialisations: Agriculture, Livestock, Forestry
- classroom teaching, practicals, block days, block weeks and field attachment
- Job prospects: Government extension agents, block/district level
  - information channel on subsidized schemes
  - Input provision (against cost)
  - Advice for technical problems
  - Trainings (production techniques, introduction of new technologies)

### **Goal**

- applied technical knowledge and skills in one subject area
- AND integrated approach (mixed farming system!)
- high social competences

### **Identification of Need and Curriculum Development (CD)**

- Need: obvious = f (existing structure of extension service, departmentalization)
- CD: ILO approach: participatory (all teaching staff), based on job analysis (tasks and skills), total 1 year, endg 1991
- M & E: Tracer Studies (1995, 1998, 2003) to follow up and adjust the curriculum

### **Planning and Implementation**

- Planned sequence of CD (1 y), training in teaching methodology (3 months) and production of teaching materials (3 months): all teachers with specialist support during planning, key moments and trainings.
- First batch of students in 1992, 13th batch starting July 2004.
- Continuous upgrading of teachers (studies abroad, refresher in methodology)
- Major adjustments: entry criteria (X to XII class pass), integration of new contents based on tracer studies (computer science...)

### **Lessons learnt**

- Participatory CD lengthy process, but good for team spirit, ownership and thorough knowledge and understanding of Curriculum/Syllabus.
- Integrated approach often only on paper; heavily dependent on structure at central level!
- Tracer Studies: consistent methodology; need to act on findings and publish actions taken (feedback to informants and PR).
- Curriculum has to be in constant process of adaptation – needs to be institutionalized (not left to individual teachers) and reviewed regularly (5y).
- Student follow-up crucial, but difficult due to distances, in-service rotations etc.

## **Issues / Upcoming Challenges**

- Saturation of market
- New function of extensionists in the support to decentralized planning
- Entry criteria from 10-12 class – implications on motivation to work with farmers?
- Need for new, more flexible careers - adoption of credit system?
- NRTI – member college of Royal University of Bhutan

## **15. – 16. In-service Trainings (existing)**

### **Description**

- Target group: Government in-service staff, selected by district authorities, as per need
- 1 week to 1 month; classroom teaching with heavy involvement of participants, practicals, often ToT approach
- Often taught in collaboration of external staff and experts

### **Goal**

- directly/indirectly refresh & update knowledge and skills of field staff to ensure up to standard extension
- Learning and updating opportunities for NRTI teaching staff

### **Identification of Need and Curriculum Development (CD)**

- Needs refresher: jointly by NRTI and MoA – as collected from field
- Need updating: = f (new technologies, new policies and acts) e.g. Cooperative Act and Decentralization => ToT for group formation and management. Often stimulated and paid for by projects and donor agencies
- CD: NRTI staff, if needed in collaboration with involved agencies and/or external experts
- In-service Trainings (existing)

### **Planning and Implementation**

- Part of yearly plan of action, and (often) ad hoc

### **Issues/Challenges**

- Donor driven?!
- Often same participants returning for various courses (=> Selection criteria?! Possibility of implementing all?)
- Courses as treat and additional income (often participants don't know what course they have come for!)

### **Lessons learnt**

- Need to formalize/institutionalize integration of new topics into diploma courses (before and independent of curriculum review)

## **(17. - 18.) BSc and MSc (planned)**

### **Goal**

- Providing in-country higher education
- Prepare students for higher level jobs in government service (policy level, research stations, district level technical committees) and private sector (industry, and?)

## **Proposed Structure**

- Duration as per international standards
- 12th class pass, science background & evtl. also high performers in diploma training?
- Flexible structure to allow for various career prospects (core subjects, specific subjects and subjects of choice)

## **Identification of Need and Curriculum Development (CD)**

- Need: Workshop involving stakeholders from Government and private sector to define possible profiles of graduates, required numbers etc
- CD: participatory process, similar to CD process for diploma course NRTI (based on defined profiles' analysis (task and skills).

## **Planning and implementation**

- First batch BSc to start in July 2006
- Additional infrastructure needs

## **Challenges/Issues and open Questions**

- Clarification on future functions of graduates urgently needed
- Awareness and understanding about qualifications with respect to TORs
- Offers for Rural Households

**19. Offers for Rural Households:** Non-farm activity courses; Training by Extensionists; Farm Business Courses; Agricultural Apprenticeship; Cooperative & Assoc. Leaders

## **20. – 22. Farm Business Courses (existing, review needed)**

### **Description**

- Target Group: min. 18y, min. Class VI, with land resources and farming experiences, with project concept
- 2 weeks - 3 month; in various subjects; emphasis on practical skills, including farm management and economics

### **Goal:**

- Enable interested farmers to gain technical and entrepreneurial knowledge and skills for income generating activities (farm businesses)

### **Modules of Farm Business Courses**

Vegetable production, Mushroom production, Nursery farming, Piggery, Poultry Production, Dairy Husbandry, Bee Keeping, Fishery, Forest Harvesting (Chain saw), Cultivation of Medicinal Plants, Essential Oil Production

## **Identification of Need and Curriculum Development (CD)**

- Need: brainstorming (NRTI, MoA)
- CD: NRTI teaching staff, supported by external experts, where needed

## **Planning and Implementation**

- Start-up at NRTI, handed over to RDT (Rural Development Training Centre )

## **Challenges /Issues**

- How to effectively (and cost efficiently) distribute information about course offers
- What about an-alphabets – justified to exclude? If include, need for new teaching materials
- Need for decentralization of training
- Interest in Content vs. Income from training!
- Need/possibilities to combine with other non-NRM offers (handicraft, vocational training?)

## **Lessons Learnt**

- need for access to investment credit
- Need for technical support after course (who? How?)
- Entrepreneurship, Economics, Market orientation - need for mainstreaming in teaching staff and extensionists for decentralised provision of courses

## **23. – 24. Agricultural Apprenticeship (in work)**

### **Goal**

- To provide farmers with knowledge and skills on
  - Sustainable and viable production
  - farm management
- To improve income and living conditions of farmers
- To make life in rural areas more attractive

### **Suggested Structure**

- 2 years; practical work on progressive farm,
- theoretical and practical inputs in blocks, tailored to needs, flexible
- Target Group: min. Class VIII, reading and writing

### **Identification of Need and Curriculum Development (CD)**

- Need = f (no prospects for early drop-outs; white collar jobs mostly in urban/semi-urban areas => rural-urban migration of youth; farming as way of life, independent of viability; subsistence farming)
- CD: skill-based, involving stakeholders, taking into account regional differences

### **Planning and implementation**

- Pilot batch with progressive farmers and first group of students
- On the job training of „Master-farmers“

### **Challenges/ Issues/Open Questions**

- Inhomogeneous groups (level of schooling)
- Multitude of needs due to different agro-climatic zones
- Selection of Masterfarmers
- Small structures vs. Idea to work on farm of „Masterfarmer“ (work-load)
- Financial incentives for „Masterfarmers“?
- Distances vs. need of timing of practical/theoretical inputs
- Need/possibilities to combine with other non-NRM offers (handicraft, vocational training?)

## 25. Community, Cooperative & Association Leaders Training

### Goal

- Improving effectiveness and efficiency of rural community-based groups (production/marketing etc. – not political or administrative)
- provide tools, knowledge and skills to manage small groups
- Create awareness about cooperatives and associations etc.

### Proposed Structure

- Short courses, in series,
- task oriented (partly on the job)
- decentralised

### Identification of Need and Curriculum Development (CD)

- Need: given by developments in policy, cooperative act (2001), access to new markets, WTO
- CD: instructors RDT in collaboration with Royal Institute of Management and NRTI in-service courses

### Planning and implementation

- Start in project regions and where market access/potential

### Challenges/Issues and open Questions

- Inhomogeneous groups
- Leadership qualities vs. Schooling level (an-alphabets)
- Selection of candidates from existing vs. Potential cooperatives/associations/groups
- Timing (part-time, next to job)

## 26. Summary of Major Issues and Possible Solutions

- **Training DSA as income source and main motivation for participation** => no DSA, but training/lodging and travel free of cost
- **Neglecting of trans-sectoral issues** => coordination body and active inclusion in all trainings.
- **Wide variety of agro-climatic zones in Bhutan and (regionally) varying farming systems/practices** => self-contained course modules; core modules to be combined with optional/choice modules to best suit the different needs
- **Need for decentralized training offers vs. logistics and concerns of quality insurance** => M&E group to constantly evaluate quality of trainings
- **Need for conducive framework for use/implementation of course content**
  - . follow-up of students for provision of technical support
  - . facilitate access to funds
  - . careful selection of candidates and/or strict adherence to entry criteria
  - . Provide links with non-agri education offers (e.g. Taxi driving, vocational training) that have potential for income generation.

## **27. Conclusions – for Discussion**

### **Rural Learning**

- can benefit rural population indirectly (through change agents) or directly
- has to provide life-long learning opportunities for both change agents and rural households (not same offers BUT interlinked and interdependent) = need for coordination
- for change agents can be centrally offered, long-term and throughout the year.
- for private households, most training must be locally/decentrally offered, as short-term/evening course and during less busy times of year.
- Participatory need analysis and curriculum development is best for all trainings, however, can be difficult due to lack of time, interest/knowledge of farmers/rural communities or due to logistic problems.

### **Questions for Group Work**

- Look at the overview of learning offers in the rural area in Bhutan. What (kind of) offers are missing?
  - Do you agree on the distinction between offers for learning agents (indirect) and rural households (direct)? Why?
  - How do the recommendations and conclusions given coincide with your experience? Where do you disagree Why?
  - What additional recommendations/conclusions would you draw?
  - Make a SWOT analysis for both the apprenticeship and the degree level courses (BSc/MSc) and recommend each 3 improvements to solve the problems and challenges listed.
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## CURRICULUM VITAE

### PERSONAL DETAILS

Name **Olivia Marcella Hartmann-Fässler**  
Nationality Swiss/British  
Date/Place of Birth 11.3.1969, Portsmouth, UK

### ADDRESS

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### EDUCATION 1994-1995

**MSc Human Nutrition, LSHTM** (London School of Hygiene and Tropical Medicine, University of London). Special focus on nutrition in developing countries, including social aspects of nutrition, food security, nutrition and primary health care, nutrition programme planning, monitoring and evaluation, nutrition in emergency situations, basic concepts of epidemiology and public health statistics.

*MSc Thesis (7-9/95)* Food Distribution Systems and Nutritional Status. A case study of the Rwandan Crisis. Evaluation of different systems of food distribution in emergency situations.

1988-1993

**BSc/MSc Agriculture (Speciality: Animal Production), SFITZ** (Swiss Federal Institute of Technology Zurich, Switzerland).

*MSc Thesis (5-11/93)* at the International Centre for Tropical Agriculture (CIAT) in Cali, Colombia. Effect of mixtures of shrub legumes with grass of low nutritional quality on intake and nitrogen balance in sheep.

*Publication:* Fässler O.M. and Lascano C.E., 1995. The Effect of Mixtures of Sun-dried Tropical Shrub Legumes on Intake and Nitrogen Balance in Sheep. *Tropical Grasslands*, Volume 29, 92-96.

*Incl. 1991-93/97*

**Swiss Diploma of Didactics, SFITZ**

Teaching methods and methodology with focus on agricultural settings. (Final exams completed 1997 due to work abroad).

1981-1988

**Gymnasium** (equivalent of GCSE and GCE 'A' level), Kantonsschule Wiedikon, Zurich, Switzerland. Including **Student Exchange Year** (Senior Year High School), 1986-1987, Kentucky, USA.

### WORK EXPERIENCE 06/03 to date

**Adviser NRTI/RDT, Helvetas** (Swiss Association for Development and Cooperation). *Bhutan*. Support to Natural Resources Training Institute in the areas of Quality Management, Human Resource Development, upgrading into University College (institutional aspects, curriculum development and strategic planning). Support to Rural Development Project to build up various educational offers in the rural area (apprenticeship, farm business courses and management for association leaders etc.).

11/99 – 12/02	<b>Manager India Programme, Intercooperation</b> (Swiss Organization for Development and Cooperation). <i>Switzerland and India</i> . 18 projects/programmes in the area of natural resource management, with different partners such as government, NGOs, CBOs, before and during the process of decentralization.
<i>Incl. 4/01 - 6/02</i>	<b>International Consultant for UP-DASP (Uttar Pradesh Diversified Agriculture Support Project), World Bank.</b> <i>India</i> . Support the privatisation of service delivery (advice for training and curriculum of Paravet Programme); guidance on the institutional set-up and on field performance recording for the development/conservation of local breeds; set up of monitoring and evaluation system for the livestock component.
7/97 – 10/99	<b>Project Manager DPRK, CCC Switzerland.</b> <i>North Korea</i> . Bilateral Project on fodder and pasture development, goat breeding and dairy development, including extension and training. Overall responsibility for activities; technical support and training on (goat) breeding i. p. breeding schemes, artificial insemination, semen freezing.
3/96 - 6/97	<b>Research Assistant, FAT</b> (Swiss Federal Research Station for Agricultural Economics and Engineering). <i>Switzerland</i> . Concept and initiation of two studies on work time requirements (direct marketing/side tasks in agriculture) involving 60 farm households; Collaboration with a project for animal friendly housing through the development of specific software for data collection and processing.
5-8/94	<b>Assistant Health Worker, Private Arrangement.</b> <i>Health Centre Chichica, Guaymi Indigenous Zon, Panama</i> . Primary Health Care, nutrition and health advice for mother and child, vaccination campaigns, anthropometric measurements, agricultural work.
7-10/92	<b>Agricultural Instructor for indigenous/tribal people, LIL</b> (Light in Latin America). <i>Costa Rica, Tinamaste</i> . Teaching, practical agricultural skills and overall responsibility for small livestock production (goats, sheep, breeding rabbits).
4 - 5/1992	<b>Internship in the Feed Industry, Landverband St.Gallen</b> and Feed Mills in St. Margrethen. <i>Switzerland</i> . (3 weeks). Insight into processes of feed industry from raw material, storage, recipes (software) over production, packaging, labelling, quality control, to extension and sales.
4/92	<b>Internship as Agricultural Extension Officer, LBL</b> (Office for Agricultural Extension). <i>Switzerland</i> . Revision of manual for extension officers (dairy cattle feeding).
4-10/91	<b>Internship as Farm Manager, E. Bourgeois Farm.</b> <i>Ballaigue, Switzerland</i> . Insight into farm management in mountainous area, practical work (in fulfilment of internship requirements for BSc Agriculture).