

Innovation for Sustainable Development

John M Renner*

*Edith Cowan University, Western Australia. **Keynote address at an international conference on Innovation for Sustainable Development held at Bansomdejchaopraya Rajabhat University, 19-20 October, 2008.**

“Innovation for Sustainable Development” generates important messages for us all through its focus on three key words: innovation, sustainable and development. It is also substantially in tune with the UN Decade of Education for Sustainable Development that began in 2005 and currently supported by at least two other supportive conferences in Thailand: The 11th UNESCO-APEID International Conference to be held in Bangkok, 12 – 14 December entitled “Reinventing Higher Education: toward participatory and sustainable development and The 2nd Technology and Innovation for Sustainable Development Conference to be held at Khon Kaen University 28-29 January, 2008.

Definitions

Sustainable development is frequently defined to match the words of the Brundtland Report first published 20 years ago: “Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs”. (World Commission on Environment and Development, 1987, p87) Although sustainability suggests a strong environmental bias, the Brundtland Report emphasised the importance of including economic, social and cultural activities as part of the definitional profile. The environment too, was viewed holistically. That is to say, the report recognised that sustainable development could only be achieved by

recognising the importance of interrelationships between natural and human systems.

Of course at the so-called green end of the environmental continuum, the term ‘sustainable development’ is an oxymoron. The greens ask: how can development (growth in disguise) be part of sustainability? To them, sustainability and development are incompatible. Those with a commercial /economic predisposition will argue a much softer interpretation of sustainability and development; one that encourages economic growth while maintaining environmental sensitivity.

The term innovation is a little less controversial, defined as anything new: a product, a method, an idea, an action. Thus, an innovative technology may be a new approach to management (the Japanese inspired Quality Circles), or an organisational change (Just-in-Time), a new approach to waste water management, a trademark retrieval system, a new approach to wine fermentation, a new approach to the study of Thai music, or the development of the ideal library for locality development, perhaps a new cooperative education model. In short, innovation in the conference title can include rather more than new products, new machines and new software. And we should remember that what has now been superseded was once an innovation; what was once an

innovation many years ago could be a current innovation elsewhere.

So in our search for definition, we are now ready to paraphrase the conference theme. How acceptable is the following? **“The use of new ideas, methods or products to achieve productive change without disadvantaging future generations”**. Perhaps we should take another step and add **“productive change that will advantage future generations and their environment”**. With these brief assertions let me escape from the important problem of definition to review two examples of ‘Innovation for Sustainable Development’ in the province of Phayao.

Innovation for Sustainable Development in Phayao

What are the major challenges to sustainability in rural Thailand? Soil depletion, irregular and unpredictable rainfall, marketing limitations, limited opportunity for value-adding to farm products, inferior management practices.

Two case studies of Innovation for Sustainable Development in the Province of Phayao target all of these problems and show how farmers and their families in Phayao can shift from poverty to a sustainable farming regime. They also show how changes in one

sector of the economy have potential to benefit other sectors; how farming families can work effectively as a team and collaborate with other families to achieve sustainable development.

As you probably know, Phayao is about 700 Kilometres north of Bangkok, a province surrounded by mountains and within easy access of Chiang Rai. It is a small province (6335 square kilometres) with a rich history and considerable agricultural potential. Unfortunately, exploitative practices by land owners and land lords have not only severely diminished the mountain forests, but have led many farmers into chronic debt. In extreme cases, farmers have been driven off the land and their families forced to migrate to substandard environments. Problems of poverty and crime have led NGOs in Phayao to search for solutions. These two case studies briefly document two attempts to find a solution to an entrenched multi-faceted problem.

Case study 1. Sustainable agriculture through value adding, 2005 - (Tambon Ban Tham, Tambon Ban Pin, Tambon Nong Lom)

The focus here is to develop food and herb processing for local and national markets to avoid wastage of farm products during the harvest seasons and to enable these processed

products to be available throughout the year. In previous years, leftover fresh products were thrown away after daily selling. By providing equipment for food processing and preserving, new sustainable markets will be created. Further, success with existing products has led to diversification of farming and to collection of a wider range of forest foods for processing and marketing.

Items purchased: one large refrigerator, five solar driers, stainless steel shelving, one bakery oven, four stainless steel tables, four electric fans, kitchen utensils, one power mixer and two compressing sausage machines (Figure 1-4)

Equally important has been the training of village teams to prepare marketable products:

Training on the production of herbal shampoo and dish cleanser

Training on the processing of local fruits to dried fruits (longan, banana, mango)

Training on the making of fruit juice (lychee, longan)

Training on the making of drinks for health (lemongrass, tamarind, passion fruit)

Training for making crispies (pumpkin, sweet corn)

Training for making Thai sweets and jams

Training on the processing of local food products (pork skin, sausage, bamboo shoots)

In addition:

Training for proper packaging and marketing

Training on cooperative management

Training for methods of sustainable agriculture

Leadership training

This complex exercise in innovative management has now been active for two years and will continue to function without any further funding. Innovative management skills covering village teams from ten villages have been successfully implemented. This is in addition to seasonal farming commitments and the gathering of forest products eg bamboo shoots. Farmers have now seen the significance of a wider range of products and diversification is expected to continue especially in diversified organic farming employing carefully calculated crop rotations and recycling of organic 'waste' as compost and mulch.



Figure 1. Solar Driers used to preserve farm products and prepared foods



Figure 2. Food preparation on stainless steel tables. Highest standards of hygiene



Figure 3. Food packaging in sealed containers for local and national markets



Figure 4. Diversification of local industry
using funds from sale of farm products

Case study 2. Sustainable agriculture through dependable water supplies, 2008.

Farmlands in Tambon Ban Tham, Tambon Ban Pin, Tambon Nong Lom and Charoensap Village (42 families) Note: same tambon as for Case Study 1

This case study reports project planning for water resource provision and management to ensure that agricultural production can continue through the dry season and the villagers in Charoensap Village will have sufficient and regular safe water. The intention is in 2008, to conduct workshops on water resource management for each tambon to ensure that all users are informed about water resource management and the importance of regarding water as a shared environmental resource. Also, to implement the construction of a highland waterworks system in Tambon Nong Lom and to construct reservoirs and smaller water ponds and water tanks near groups of farms to ensure

adequate supplies of irrigation water.

Already, the three tambon have become models of innovation for sustainable development (refer to Case Study 1). Other tambon in Phayao are learning from this pilot project and are looking for ways of avoiding total dependence on seasonal rain. A dry season can be as long as eight months and a succession of dry seasons can impose severe hardship, both on farmers and villagers. Funding is being sought for approximately 740,000 baht to implement the objectives of Case Study 2.

Concluding Comment

We have examined innovation for sustainable development in one small province of Thailand. So how do these two case studies fit the theme of this conference? Or put differently, what distinctive features of innovation for sustainable development are revealed in the case studies of sustainable development in Phayao? You are invited to use the attached **Checklist of Sustainable Development** (Figure 5) as a guide. Further, you are invited to review the content of the checklist, modifying the list in the light of your own research experience.

Finally, defining the conference theme and more especially ‘sustainable development’ remains an open exercise (WCED Report, 1987). For example, in its consideration of sustainable

development, UNESCO takes a broad all-encompassing interpretation of the term using the metaphor of four interlocking pillars of sustainability: natural, economic, social and political. These are expressed in turn ideally by conservation, appropriate development, peace, equality and human rights and democracy (Figure 6). Yet, how seldom are these ideals fully realised? We might well ask what impediments prevent this ideal picture of sustainable development from emerging in our various Thai communities? And how valid are the alternative definitions referred to earlier in this paper? Finally, in the light of the two case studies and the SD checklist in this paper, what modifications should we make to our definition of ‘sustainable development’? And what local action should we take to ensure effective sustainability as prescribed by UNESCO?

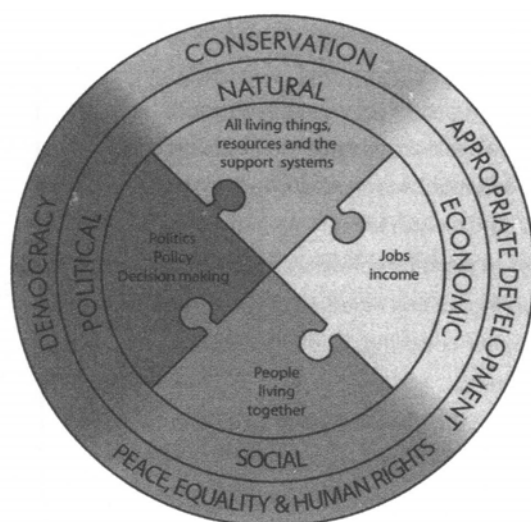


Figure 6. UNESCO's model of interlocking pillars or dimensions of sustainability

Figure 5. Checklist covering perceptions of Sustainable Development

- Care and concern for the natural environment
- Pollution control and prevention
- Supportive ecosystem management
- Environmental protection
- Partnership and collaboration to achieve sustainable development
- Working in teams
- Planning for long-term development
- Evidence of commitment to environmental goals
- Building on SD achievements
- Sharing and communicating SD to others
- Product stewardship for SD
 - Avoiding waste
 - Recycling and re-use of materials
 - Use of clean technologies for production
- Overcoming and avoiding
 - Excessive diminishing of natural resources
 - Poverty
 - Depletion and degrading of the natural environment
- Management for SD
 - Searching for 'clean' solutions to environmental problems
 - Using multidisciplinary approaches including environmental management
 - Management for community long-term benefit

References

- Final Report. (2005). **Project for the Development of Food and Herb Processing**. Limited Circulation. Phayao: Thailand.
- Project Proposal. (2007). **A Water Resource Development Project in a Sustainable Agriculture System**. Limited Circulation. Phayao: Thailand.
- WCED Report. (1987). **Our Common Future**. World Commission on Environment and Development. Oxford University Press.
- www.accu.or.jp/esd/mt-tatic/ino/thailand/2007/03/mission.htm. An Education for Sustainable Development site with a focus on Thailand. Controlled by ACCU-UNESCO i.e. the Asia/Pacific Cultural Centre for UNESCO.
- www.sustdev.org/. A recommended basic reference; up-to-date; provides international coverage.
- www.sustainable-development.gov.uk. Offers useful and expanded definitions; gives practical guidance and suggests recent relevant publications.
- www.ulb.ac.be/ceese/meta/sustvl.html. Library resource centre: strong on resources for teaching
- www.un.org/esa/sustdev/. Global coverage; a very informative site.