

A Case Study on Long-term Ecological Management In a Sugarcane Plantation ^{1/}

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Introduction

The model of long-term ecological management by a distinguished sugarcane grower for rural people's well-being and an area-based system of cane growing and community development was described. The model is based on the concept of 'the down-sizing of long term ecological management to become practical and sustainable on-farm management.' Under wisely adopted and adapted research knowledge the researcher, extension work and growers developed system of approaches and partnerships. This became the most powerful tool for implementing each specific area-based management.

The model gives an interesting-learning system for better understanding what drives the canegrowers rather than what drives the technology. The assessment of research & development and the implementation and management for sustained crop productivity has been observed. This extends on social, environmental, financial and political forces all of which have a tremendous impact on inputs and outcomes.

Knowledge and capital are the main inputs required to meet the canegrowers' basic need. Their needs are complex and not dependent on technology per se. Perceptions and misconceptions often elude researchers and mill extension workers, yet they may be valid to the canegrowers. These differences need to be worked on in participatory groups and partnerships. The initiation and assurance of responsibility of the local canegrowers groups worked for the community success. This is important among the three participating partners including policy planning, planting to harvesting and transportation to the mills.

In the past, transfer of technology on production pre se was the primary driving force. Recently, this has broadened to include social environmental and economic aspects. Research into technology is no longer sufficient on its own; how it is adopted and adapted is becoming more and more critical. Researchers have often failed to appreciate the canegrower's needs, particularly in rural village situation. Local politics often intervene to reduce effectiveness of delivery.

At present all of the disciplines : Research and Development and Extension as well as implementation and management are developing into a broader based holistic approach. The canegrower has to be proactive and develop participatory partnerships.

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Researcher and Extension personnel must understand what the canegrower is doing, why he is doing it and what he perceives as his main constraints and opportunities. We must identify the service gap and service delivery systems to reduce the gap. The partners must understand the level of indigenous knowledge and areas of potential conflict. Canegrowers are different in local resources ; different area-based approaches are required for optimum productivity and profitability. This is important for each unique sustained rural development unit for cane and sugar agrobusiness for tomorrow at the regional and country levels.

Agro-ecological model of sustainable sugarcane grower

On 19 July 2002, Kasetsart University conferred the Honorary Doctor of Philosophy on Mr. Suparb Eauvongkul, a sugarcane grower as a lifetime on-farm researcher in Kumpawapi district, Udonrthani Province.

Dr. Suparb Eauvongkul was recognized for his breakthrough in sustained productivity, improved profitability, and a conserved and revived agro-ecosystem leading to a friendly environment. The holistic recombination approach of research and development on Plant Sciences and Indigenous Knowledge of Local Cultural Wisdom became a precise and cost effective on-farm practice. The practical management for success and sustaining has been handed on within family for 3 generations and 40 successive years.

Beginning with 1,550 ha. of farmland he reformed farm layout with annual rotation among 285 ha. of new cane planting plot, 490 ha. of ratoon cane plots and 775 ha. of follow with priority on soil conservation, soil fertility improvement and land preparation. Total organic matter was normally ploughed underground, including 3-5 tons of sugarcane bagasse, filter from sugar-mill and pigeon pea as the main green manure crop and also half of sugarcane biomass which was left in-field after harvest. The natural decomposition is encouraging in the numbers and diversity of soil species, ensuring the optimum efficient activities of natural saprophytes and fermentation organisms as well as beneficial pathogens and antagonistic microorganisms, both soil flora and fauna. During the natural decomposition process the cane bagasse and biomass also serves as a rainwater catchment underground for a water supply in the dry season next year.

Vetiver grass and the sugarcane fibrous root systems prevent soil erosion and conserve soil moisture by mulching. The organic waste materials from farms and sugarmills can be reused for organic and biofertilizers. Selected healthy cane varieties and strong on-farm quarantine are posts as used as prevention and control measures. Appropriate harvesting, transportation and hauling to the mill are cost effective accounts, in addition, agro-forestry has been introduced by planting several valuable species of timber trees which improve the on farm microclimate and add to productivity and a friendly environment.

His sugarcane plantation always welcomes conformers, both Thai and international visitors, providing a learning ground for field trips, study tours on exchanging knowledge and experiences involving productivity a managerial system and sugarcane professional business. This lead to the development of on-going agro-tourism for rural development and regional income.

Dr. Suprab's contribution has improved socio-economics and the quality of life within sugarcane rural communities. Working in partnership with his farm-labor colleagues as if his own family members, he initiated his men's family collective. This saved funds by partial coupon payment for food and household consumption and by allowing purchasing at local quality and thrifty in stores. Caring for spouses education, health, strengthening security in communal familiar with all people's goodwill. These partnerships would bring up a possible drives in order to solve their problems of draught, flood, debt and poverty. The sustainable and profitable Thai cane and sugar agro-industry will be with time gradually improved similar to the other progressive agricultural sectors in a stable society. Knowledge dissemination in local community networking is the only way to be implemented for countrywide achievement.

Hopefully, this sharp and effective model-sample of Thai intellect with developed a single field crop, sugarcane, into an area-based, community-based integrated agro-ecology will serve as a model for developing a system for human, rural and city development. This system of grass-root people's partnerships with upwards implementation brings the true understanding and knowledge of a paradigm shift in government policy thinking. This approach provided the stepping stones for consideration under the National Development Plans within the context of multi-communities-based and societies economic benchmarking of the Royal Thai Kingdom.

References

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