Mapping and Assessing University-based Farmer Extension Services in ASEAN through an Agro-ecological/Organic Lens

Wayne Nelles, Ph.D. Visiting Scholar,
Chulalongkorn University School of Agricultural Resources (CUSAR)
Consultant, United Nations Educational, Scientific and Cultural Organization (UNESCO), Bangkok and Hanoi, Offices

Background Presentation to Cambodia Workshop
Yezin Agricultural University (YAU), Nay Pyi Taw, Myanmar
(***MYANMAR Case)***

25 January 2017

OVERVIEW

1. **SDGs amid Global/Theoretical Contexts and Social/Agro-environmental Problems**

2. **South East Asian (regional) & ASEAN (geopolitical) Contexts**

3. **UN & UNESCO Programme Contexts/Rationale for University & Partner Collaboration on Agro-ecology Learning and Research**

4. **Thai Extension Services, Chulalongkorn University Research, Bangkok) – Case Study (Problem Example)**

5. **Chulalongkorn University led (Sida funded) *Higher Education for Sustainable Agriculture (HESA) and Food Security in Southeast Asia Project.* - Results, Lessons & Recommendations**

6. **New ASEAN Regional Extension Research Project (underway June 2016 – 31 May 2017) with partners**

7. **Other (Open Discussion)**

1. Problem Introduction (Global-Theoretical-Ecological & OA/AE specific)

1. Introduction

New global Sustainable Development Goals (SDGs), *2015-2030*

SDGs, *2015-2030*

- **New Contexts for our current study about university based agriculture extension and research**

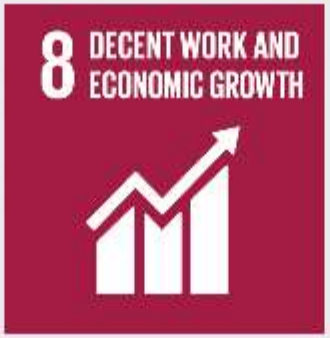
- **17 new *Sustainable Development Goals (SDGs) with* 169 targets** (agreed to in 2015 by UN and member states)

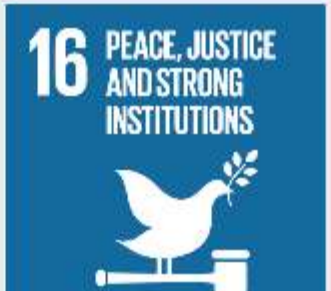
Reference

United Nations General Assembly (UNGA). 18 September 2015. ***Transforming our world: the 2030 Agenda for Sustainable Development***, A/70/L.1.

SUSTAINABLE DEVELOPMENT KNOWLEDGE PLATFORM

stainable Development Goals





Sustainable Agriculture (SA), Research and Extension in new SDGs

Sustainable Agriculture (SA) in new SDGs

Zero Hunger SDG 2

- SDG 2 - "End hunger, achieve food security and improved nutrition and **PROMOTE SUSTAINABLE AGRICULTURE**"

- 2.a **INCREASE INVESTMENT**, including through enhanced international cooperation, in rural infrastructure, **AGRICULTURAL RESEARCH AND EXTENSION SERVICES**, technology development and plant and livestock gene banks in order to enhance agricultural productive capacity in developing countries, in particular least developed countries

SDG 4 Education
(Higher/Tertiary References)

SD4 re Tertiary Education

- Goal 4. **Ensure** inclusive and equitable **QUALITY EDUCATION** and promote lifelong learning opportunities for all

- SDG 4.3 By 2030, ensure equal access for all women and men to affordable and quality technical, vocational and **TERTIARY EDUCATION**, including university

- 4.b By 2020, substantially expand globally the number of **scholarships** available to developing countries, in particular least developed countries, small island developing States and African countries, for enrolment in **HIGHER EDUCATION**, including vocational training and information and communications technology, technical, engineering and scientific programmes, in developed countries and other developing countries

But…

- **No mention of farmer extension** or agriculture education **or university roles** in SDG 2 or SDG 4 (yet significant needs and **cross-cutting issues/practical challenges** exist)

- **SDG 4 is weak** in addressing **agriculture/food education, research and farmer extension**, or responding to broader complex and urgent agro-environmental and development challenges implicated in other SDGs

Trade and Environment Review (and others) (UNCTAD, 2013)

Wake up before it is too late: Make agriculture truly sustainable now for food security in a changing climate (Calls for **RADICAL** change in Global Food & Agriculture System toward more **organic/sustainable** approaches)

- **Question:** 1) **What are universities doing** about the challenge **through their extension services?** Especially for poorer Rural farm communities and development concerns?

Key UNCTAD Messages - URGENT

Two Key UNCTAD Messages (among others):

- ….The **world needs a paradigm shift in agricultural development**: from a "green revolution" to an **"ecological intensification"** approach…

- ….in pursuing a fundamental transformation of agriculture, one should take into account systemic considerations…in particular…the **need for a two-track approach** that **drastically reduces the impact of conventional agriculture**, on the one hand, and **broadens the scope for agro-ecological production methods** on the other…" (UNCTAD, 2013, p. i).

Reference

United Nations Conference on Trade and Development (UNCTAD). 2013. ***Trade and Environment Review 2013 - Wake up before it is too late: Make agriculture truly sustainable now for food security in a changing climate***. UNCTAD/DITC/TED/2012/3. Geneva: United Nations.

Education & Universities – Part of the Problem (and Solution)

Universities , Education (and Extension) Systems have arguably been part of the problem

- **Universities** have largely supported an unsustainable industrial, agri-food system or even more directly **inhibited Sustainable Agriculture** (SA)

- They have not adequately served rural communities or small-holder farmer needs

  "While **higher agricultural education (HAE)** has contributed to the growth and modernization of production agriculture, it **has often failed** to adjust its curricula…to respond to the changes affecting agriculture and the rural space….(but) **Universities can potentially make a greater contribution to the prospects of depressed, relatively neglected rural communities**" (Atchoarena and Holmes, 2004 pp. 15, 23).

References

Atchoarena, David and Keith Holmes. 2004. "**The Role of Agricultural Colleges and Universities in Rural Development and Lifelong Learning in Asia**." *Asian Journal of Agriculture and Development,* Vol. 2, Nos. 1&2, pp. 15-24.

Ison, Raymond L. 1990. ***Teaching Threatens Sustainable Agriculture*.** Gatekeeper Series no. 21. London: International Institute for Environment and Development, Sustainable Agriculture and Rural Livelihoods Programme

Asia-Pacific Agro-Ecological Research, Education & Extension Challenge – (FAO 2015 Conference Recommendations)

Governments, decision-makers, technical and financial partners… in particular FAO, should:

- 7) **Integrate agroecology in the curricula** of both formal and nonformal primary and **higher education institutions**, in vocational training centers for producers, including farmer field schools, school farms, farmers' trainings and school gardens. This should recognize and value the important Agroecology work ongoing in government and civil society and social movement Farmer Field Schools, and build on that foundation to further develop, **strengthen and upscale Agroecology**….

The academic and research community should:

- 12) **Build a regional network of agroecology researchers,** involving CSOs and small-scale food producers and allow for learning from each other across countries,

- 15) **Recognize, support and document producers' knowledge**. For this, **a new research and extension paradigm is necessary, …**

Reference

FAO. 2016. ***REPORT on the Multi-Stakeholder Consultation on Agroecology in Asia and the Pacific FAO, Bangkok, 24-26 November 2015.*** Rome: Food and Agriculture Organization of the United Nations.

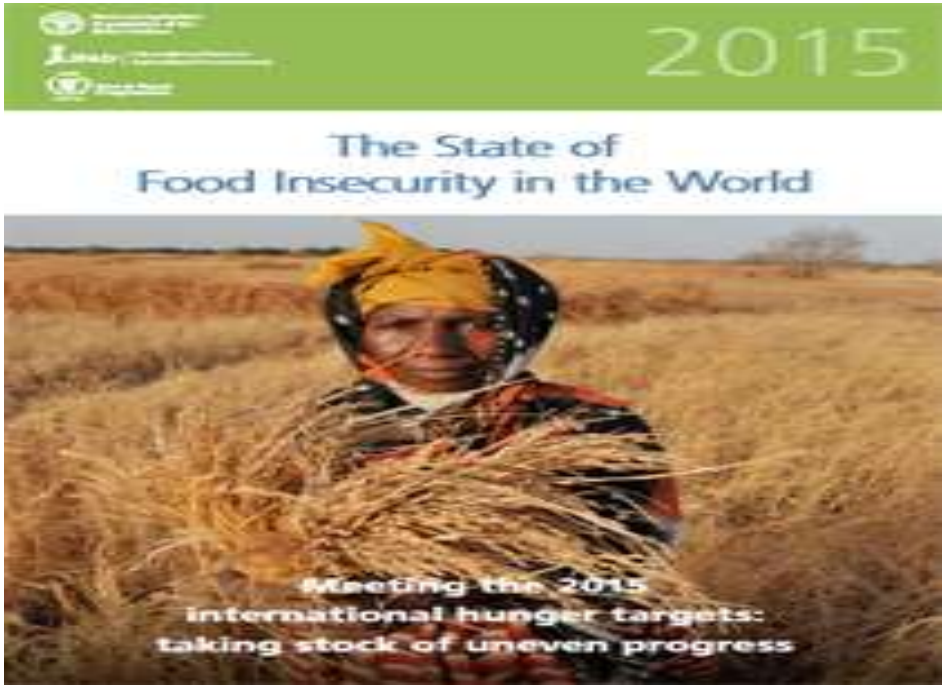
2. ASEAN Contexts

2. South East Asian (regional)
&
ASEAN (geopolitical) Contexts

SOFI Report (FAO, 2015)

- **<u>Existing agri-food system</u>** does NOT meet basic subsistence, socioeconomic or health needs (Poverty reduction/Income generation, nutritional) (**<u>795 Million still malnourished</u>** or poor world-wide)

- FAO, IFAD and WFP. 2015. ***The State of Food Insecurity in the World 2015. Meeting the 2015: International Hunger Targets: Taking Stock of Uneven progress***. Rome: FAO



ASEAN/Southeast Asian Contexts/Challenges

Hunger & Food Insecurity (Regional Data/Statistics – Need Disaggregation by Country-Sub-regions & Updating)

Number of undernourished and prevalence *(%)* of undernourishment (Southeast Asia)

2010–12 period (data mixed, some incomplete)

- 72 million undernourished
- 12.1 % of Southeast Asian population
- Variation within and between countries

2014–16 period (Some projected data with provisional estimates) - Improving but…..

- 60.6 million still undernourished regionally
- 9.6 % of Southeast Asian population
- Still variation/inequality within and between countries and urban/rural areas

References

FAO, IFAD and WFP. 2015. ***The State of Food Insecurity in the World 2015. Meeting the 2015: International Hunger Targets: Taking Stock of Uneven progress***. Rome: Food and Agriculture Organization of the United Nations (FAO). (Table 1 p. 8)

ASEAN Food Security and Sustainable Agriculture

Nelles, et. al. Eds (2014), Chulalongkorn University Press.

15 Chapters (several Chula and other authors)

National case studies

- Cambodia, Indonesia, Myanmar, Philippines**,** Singapore and Thailand

Theoretical and Regional/Comparative (Analytical, Critical Perspectives)

- Asia-Pacific and ASEAN Institutions
- Climate Change
- Civil Society Organizations and Movements
- **Education Networks** and **Extension services**
- Energy
- Green Economy
- Health
- Youth Farmers
- Research Issues

Appendices

- Symposium Report
- Bangkok Declaration
- ASEAN official Documents (Selections)

Nelles, Wayne, Annop Kunawongkrit, and Surichai Wun'Gaeo, Eds (2014**).** ***ASEAN Food Security and Sustainable Agriculture in a Green Economy: Cross-Sectoral and Interdisciplinary Perspectives.*** Bangkok: Chulalongkorn University Press (CUP).

ASEAN Food Security and Sustainable Agriculture

Nelles, et. al. Eds (2014), Chulalongkorn University Press

"Greening" Higher Agriculture and Food Security Education in ASEAN - Studies to Date?

Lack of Attention to Academic/Institutional Reform challenges in Sustainable Agriculture (SA) Education

> "….while some institutions have gone quite a long way in **reorienting their curricula toward sustainable agriculture** development, others lag behind because of **several constraints** which include policies and procedures in curriculum development and approvals; educational system peculiar to particular groups of countries; common understanding of the concepts and practices of SA; cultural and social considerations; SA advocacy at the national level; capacity and skills of teaching staff to teach SA; and faculty resistance and skepticism to change the old curriculum that would affect the traditional teaching methodologies and syllabi…" (Villareal et. al. 2002, p. 175).

What studies have since been done? Are issues similar today? Have universities reformed? How?

Dated and Inadequate Documentation/Synthesized Data, Published Research on Agriculture Education
(Whether for Pedagogical, Curricular, Institutional, Policy, or Political Concerns)

References:

Nelles, Wayne. 2014. Chapter 1, "**Greening ASEAN Agriculture and Food Security Education, Sciences, Economics and Policies?"** in Nelles, Kunavongkrit and Wun'gaeo, Eds.

Villareal, Ruben L,. Editha C. Cedicol, Nipon Jayamankala, and Bui Cach Tuyen. 2002. "**Agricultural Education's Response to the Changing Demand for Quality Trained Human Resources: The Southeast Asia Experience,**" *Journal of Southeast Asian Education*. Vol. 3, No. 2, pp. 157-181.

3. UN and UNESCO-Specific Contexts for Collaboration on Agro-ecology Learning and Research

3. Broad UN & UNESCO-specific Programme Contexts/Rationale for University & Partner Collaboration on Agro-ecology Learning and Research

Early Global UN Policy Debates/Recommendations for (Agro-ecological and Gender sensitive) SA Learning/Research/Extension

Policy goals

- Increase food production sustainably, while minimizing negative impacts on the environment and farmers, particularly poor producers and women (**pay attention to GENDER concerns**).
- Provide farmers with knowledge about a basket of options to optimize their production systems, improve their livelihoods an a sustainable basis. Develop and improve low-cost farming practices and technologies that specifically benefit poor, small producers in diverse environments with **particular attention to women needs** so that they are able to increase their local food production.
- Increase funding for bottom-up, farmer agricultural research and development that combines the benefits of modern science with those of traditional knowledge.

Policy options

- **Reorientation of agricultural research** aims (Alternative methods to intensify production that are sustainable and equitable with a holistic farming systems approach
- Greater information and research on agro-ecology and traditional agricultural (**in education institutions and extension services**)
- Better agricultural research methods of carrying out (toward interdisciplinary)
- Governments and development agencies should implement policies that **encourage and support the application of or conversion to agro-ecology**

Naranjo, Sofia, E. Dulloo, S. Thabet, M. Villarreal and others. 2007. ***Sustainable Agriculture and Rural Development (SARD). Policy Brief 11***. FAO. www.fao.org/sard/initiative

Agro-ecological Research, Education & Extension Context (for Chula/UNESCO and AliSEA)

Agroecology Learning alliance in South East Asia (ALiSEA) Core Partner Donor with Chula/UNESCO

"ALiSEA's goal is to enable local and regional agroecology stakeholders to leverage one another's expertise to produce evidence based studies and share them broadly to support a regional transition towards agroecology… (through 3 main objectives)

- Strengthening knowledge and experience sharing among agroecological initiatives and actors
- Increasing visibility and credibility of agroecological movement towards policy makers and consumers.
- Scaling up the development and adoption of agroecological practice among farmers.

(http://ali-sea.org/about-alisea/)

Chula/AliSEA Research project & UNESCO Synergies

- Chula Research project "***Mapping and Assessing University-based Farmer Extension Services in ASEAN through an Agro-ecological/Organic Lens***

- Our research (with partners) aims to **understand** the role of university-based farmer extension services in **inhibiting or enabling agro-ecological transitions** for achieving global SDGs in ASEAN regional and national contexts

UNESCO
Management of Social Transformations (MOST) Programme

UNESCO support for member states (and educational/Science partners)

- UNESCO's *Management of Social Transformations (MOST) Programme* aims to build better bridges between research, policy and practice….

- MOST works with governments, social and human science communities and civil societies to **improve connections between knowledge and action**, connections that are one key to **positive social change.**

- Within the United Nations Sustainable Development Goals, MOST contributes to development, to the eradication of poverty, to inclusive and sustainable responses to environmental change and to the promotion of inclusive, effective and accountable governance, as well as to the achievement of UNESCO's Global Priorities: Africa and Gender Equality.

- MOST supports Member States in improving policymaking processes through a strengthened research-policy interface, which uses knowledge focused on human needs from the social and human sciences to promote a culture of evidence-informed decision-making.

Reference and Weblink

- About MOST: http://www.unesco.org/new/en/social-and-human-sciences/themes/most-programme/

QUALITY Higher Education includes ESD for SA and Agro-ecological Learning with Social and Sustainability Sciences

Agro-ecological Learning and Research is about QUALITY Education for Sustainable Development (ESD) with Strengthened Social/Sustainability Sciences

World Social Science Report, 2013

- *"Global environmental change is linked to and exacerbates other social, economic and, political crises such as poverty and inequality.* ***Global sustainability requires URGENT action*** *to protect the planet and ensure human equity, dignity and well-being. The* ***social sciences need to research the human causes, vulnerabilities and impacts of environmental change more effectively and inform responses*** ***to the challenges*** *society faces. Social scientists need to work with each other and with colleagues from the natural and physical sciences to deliver credible, useful knowledge to help solve the world's problems." (*Hackmann and Moser, in ISSC/UNESCO, 2013*, **P. 33)***

Selected Background Documents

United Nations Educational, Scientific and Cultural Organization. 2014 ***UNESCO Roadmap for Implementing the Global Action Programme on Education for Sustainable Development***. Paris: UNESCO

UNESCO. 2005 approx. ***"Agriculture," Education for Sustainable Development Information Brief***, Paris: Section for Education for Sustainable Development (ED/PEQ/ESD), Division for the Promotion of Quality Education, UNESCO.

ISSC and UNESCO, Eds, ***World Social Science Report 2013, Changing Global Environment****s,* Paris OECD Publishing and UNESCO Publishing,

4. Thai Extension Services
(case study of Problems)

4. Thai Extension Services,
Chulalongkorn University Research, Bangkok) – Case Study
(Problem Example)

Thailand's Agrochemical (and Land-Degradation) Problem
(Data/statistics reflecting unsustainable agriculture)

Thai Agrochemical Data/Statistics with Impacts on Public and Farmers

- Between 1961 and 2004 total inorganic **chemical fertilizer use increased more than 100 times**, from 18 thousand tonnes in 1961 to 2 million tonnes in 2004.
- Pesticide imports to Thailand more than doubled 1987 to 1996 (from 20, 537 to 44,701 metric tons)
- Pesticide imports then again more than tripled from 42,089 tons in 1997 to 137,594 tons in 2009.
- In 2011 tests in Thai supermarkets revealed **some produce containing up to 202 times the allowable amount of chemicals by European guidelines**
- Thailand has very few standards, monitoring or enforcement mechanisms about sale/use of agrochemicals

Sources:

Alternative Agriculture Network (AAN) Esan (26 Jan 2011). *Thailand's Pesticide Problem*.

Hazell, Peter B.R. (November 2009). *The Asian Green Revolution: IFPRI Discussion Paper* 00911 2020 Vision Initiative. Washington: International Food Policy Research Institute.

Kasem, Sukallaya and Gopal B. Thapa. 2012. "Sustainable Development Policies and Achievements in the Context of the Agriculture Sector in Thailand," *Sustainable Development*. Vol. 20, pp. 98–114

Thapinta, Anat and Paul F. Hudak (2000). Pesticide Use and Residual Occurrence in Thailand, *Environmental Monitoring and Assessment* 60, 103–114**.**

Tirado, Reye, Andrew J. Englande, Luksamee Promakasikorn and Vladimir Novotny (February 2008). *Use of agrochemicals in Thailand and its consequences for the Environment.* Greenpeace Laboratories Technical Note, 03/2008 School of Biosciences, University of Exeter, (UK).

Wipatayotin, Apinya (26 Jan 2011). Pesticide levels pose threat to Thai vegetable exports. *Bangkok Post*.

Pessimism or Progress in 2016?

(One Example: New Thai Pesticide Alert Network (Thai-PAN) Lab Tests)

Thai- Pesticide Alert Network (Thai-PAN) In 2016 show many unresolved problems similar to 2011/2012 studies Many failed toxic chemical residue tests after samples sent to UK for independent testing.

Results in 2016

- "…57.1% of fruits and vegetables granted the "Q mark" by the National Bureau of Agricultural Commodity and Food Standards, were to be found contaminated at unsafe levels"

- "…25% of the products certified as being organic, which were supposed to be free of chemicals, were found to contain chemical residues exceeding the accepted standards"

Tests in 2016 year widened to cover more substances (than in 2011/2012).

- "If the test results were cut to four main groups, as in 2012, the unsafe percentage of chemical residues would be found in only 18% of tested samples, compared with 48.6% in 2012."

- Apparently some improvement during the period 2012-2016 (but….).

Reference:

Fernquest, Jon, 4 May 2016. "Pesticides in fruits & vegetables: Govt quality mark fails test" *Bangkok Post,* http://www.bangkokpost.com/news/general/959397/q-mark-rated-fruits-veggies-fail-toxic-residue-tests

Imported Pesticides to Thailand
(with other agrochemicals)

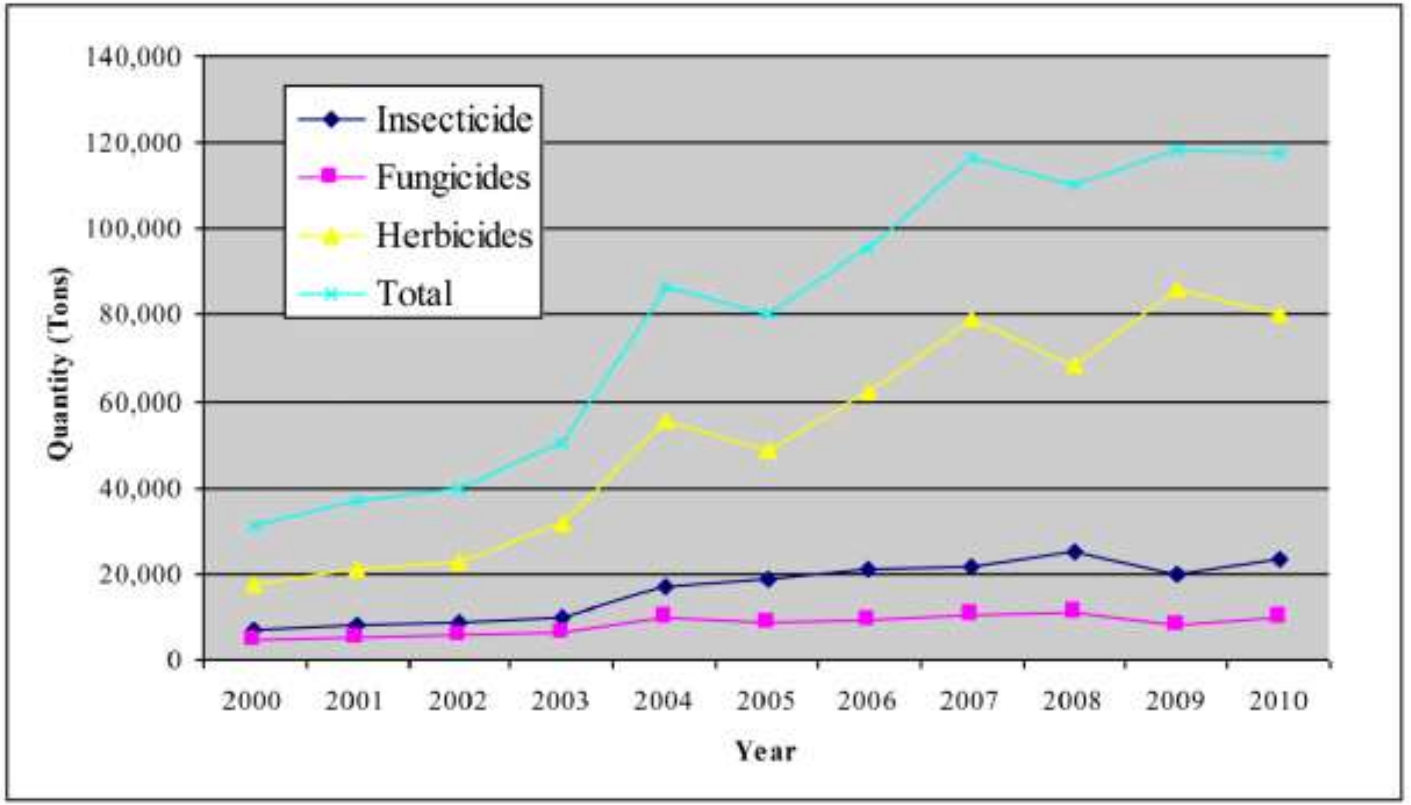


Table Borrowed From :

Panuwet et.al. 2012. "**Agricultural Pesticide Management in Thailand: Situation and Population Health Risk**" *Environ Sci Policy*. 17: 72–81.

Deforestation for industrial cash crop (Maize), Nan Province, THAILAND

Why?

Why?

What Roles do Extension Services (and Universities) Play?

Published (2016)
Thai Extension Study

Journal of Agricultural Education and Extension
Vol. 22, No. 3, 225–240, June 2016

Routledge
Taylor & Francis Group

Thailand's Department of Agricultural Extension and Agrochemical Dependency: Perspectives on Contributing Factors and Mitigation Strategies

WAYNE NELLES and SUPAWAN VISETNOI
Chulalongkorn University School of Agricultural Resources (CUSAR), Chulalongkorn University, Bangkok, Thailand

ABSTRACT Purpose: *This paper discusses theoretical, policy and practical issues concerning the problem of 'agrochemical dependency' in Thailand, including roles that public extension services play in advocacy or mitigation of agrochemical use.*
Methodology/Approach: *Our research aimed to better understand department of agricultural extension (DOAE) institutional and officials' perceptions of contributing factors to agrochemical dependency as well as strategies for mitigating agrochemical use. We reviewed relevant policies, web materials and technical cooperation agreements. We supplemented theoretical and document analysis with interviews totalling15 DOAE managers or senior officers comparing Bangkok headquarters and Nan Province perspectives. We refer to relevant secondary literatures for explanatory context.*
Findings: *Results showed differences as well as similarities between views of DOAE officials in Bangkok headquarters and those from one province (Nan) about DOAE priorities, responsibilities and perceived reasons why farmers overuse agrochemicals or do not adopt organic agriculture (OA). A national policy encouraged 'safe use' of agrochemicals but not (necessarily or effectively) mitigation while the DOAE still (to a much lesser extent) promoted self-sufficiency and OA alternatives. Interviews and documentary evidence revealed DOAE public–private partnerships with corporate advice, technical support, human resources and learning activities that encouraged or normalized agrochemical use and dependency.*
Practical Implications: *Study results should be useful for governments, donors, international agencies and department officials in policy development, program planning, training design, budgeting and delivery.*
Originality/Value: *This study is unique for: better understanding implications of agrochemical dependency and privatization of public extension services; analyzing factors inhibiting OA adoption; and examining contentious policies, partnerships, and training activities.*

KEY WORDS: Agrochemical Dependency, Sufficiency Economy, Sustainable Agriculture, Organic Agriculture, Extension Services, Perceptions, Policy, Privatization.

Agrochemical Dependency:
A major global, Thai and ASEAN concern
(reinforced by Extension services or their neglect)

We define "Agrochemical dependency" as:

> "***The unhealthy, dangerous, toxic and sometimes lethal addiction to, and often abuse of, synthetic agrochemicals (herbicides, fungicides, pesticides and fertilizers) manufactured and sold by private, profit-making corporations, ostensibly for 'crop protection' or to increase agricultural yields, incomes and food security***." (Nelles and Visetnoi; 2015)

Implications and Links

- Whether or not, or under what circumstances, agrochemicals are necessary for crop protection or food security is moot (but not debated here).

- However, **agrochemical dependency** (and its mitigation) as a poorly addressed and contentious **policy issue** as well as **practical problem** for Asia and especially **for Thai universities, public extension services** and farmers

Reference:

Nelles, Wayne and Supawan Visetnoi (2016). "**Thailand's Department of Agricultural Extension (DOAE) and Agrochemical Dependency: Perspectives on Contributing Factors and Mitigation Strategies**." *Journal of Agricultural Education and Extension,* Vol. 22, No. 3, June pp. 225–240. DOI: 10.1080/1389224X.2015.1063519

Perceived Contributing Factors to AGROCHEMICAL DEPENDENCY and abuse (Table adapted/borrowed from: Nelles, Wayne and Supawan Visetnoi, 2015). "**Thailand's Department of Agricultural Extension (DOAE) and Agrochemical Dependency: Perspectives on Contributing Factors and Mitigation Strategies**," *Journal of Agricultural Education and Extension)*. **NOTE: EDUCATION, RESEARCH & TRAINING (EXTENSION SERVICES) implied**	**Number of Bangkok DOAE Officials mentioning**	**Number of Nan DOAE Officials mentioning**
1) Criminality or corruption in government and private cooperatives	1	3
2) EDUCATION/KNOWLEDGE and ability to examine issues	2	1
3) Corporations over-**advertisement**	2	4
4) Lack of sufficient substitutes and alternatives to meet farmers' needs	2	2
5) Moral and ethical awareness/Consumers' need in making demand/ Lack of farmers' self-discipline	2	3
6) Incoherence and inconsistency of policy (and jurisdictional confusion)	1	3
7) Populism policy/political behavior (spoiling farmers/"vote-buying")	2	1
8) Lack of law enforcement and adequately strict regulations	1	3
9) Lack of budget for protection/prevention (before crises/plant diseases)	2	-
10) Easy use/quick results and less labor-force required	1	5
11) Officials with limited man-power but multiple tasks	1	3
12) Climate (tropical, more prone to plant disease/pests)	-	1
13) Non-cash payment incentives (loans, payback later schemes, etc.)	-	1
14) Social pressure and poverty	-	1
15) Lack of DOAE officials' TRAINING	-	1
16) Economic factors (high yield and more income)	-	3

Thai Extension Study (2015/2016)
Conclusions/Implications

Thai Extension Study (Preliminary Conclusions)

- **Problem – Overuse/abuse of agrochemicals** reinforced by privatization of public extension (Corporate advice and training for public officials and farmers)
- **Concern** - Lack of attention to or budget resources for Organic Agriculture (OA) alternatives
- **University Roles** - Government **extension offices** and "Crop-life" (formerly called Thai Pesticide Association) have MOU/work closely together and are on the **KASETSART UNIVERSITY** (KU) campus while academic "experts" collaborate with agro-chemical companies and receive related research grants
- **Impacts** – "**Sustainable agriculture" ideas and practices** guided now by SDGs but informed by corporate experts, profit motives and sometimes even corruption or illegal practices which perpetuate agrochemical use alongside farmer dependency on external inputs which continues to destroy environments, harm farmer health, and discourage less costly, viable alternatives
- **Implications** - **Organic** alternatives and **Agro-ecological approaches** or investments in extension are **discounted/avoided** while agrochemical models (and vested interests) dominate

Selected Reference

Nelles, Wayne and Supawan Visetnoi (2016). "**Thailand's Department of Agricultural Extension (DOAE) and Agrochemical Dependency: Perspectives on Contributing Factors and Mitigation Strategies**." *Journal of Agricultural Education and Extension,* Vol. 22, No. 3, June pp. 225–240. DOI: 10.1080/1389224X.2015.1063519

5. Chula-led South East Asia Higher Education Project

5. Higher Education for Sustainable Agriculture (HESA) and Food Security in Southeast Asia

SIANI- Sida Project

CHULA ASEAN PROJECT (2015)
Higher Education for Sustainable Agriculture (HESA) and Food Security in Southeast Asia

PROJECT - "SIANI Expert Group on Higher Education for Sustainable Agriculture (HESA) in Southeast Asia"

DONOR: Swedish International Agricultural Network Initiative (SIANI) with funding from the Swedish International Development Cooperation Agency (Sida)

HOST/COORDINATOR: Chulalongkorn University School of Agricultural Resources (CUSAR)

OVERVIEW

> "This group will assess challenges, capacities, best practices and policy options on Higher Education for Sustainable Agriculture (HESA) in the Association of Southeast Asian Nations (ASEAN) region while exchanging knowledge, and exploring interdisciplinary curriculum reform, teaching and **research-extension** needs as a contribution to **strengthening regional poverty reduction, food/nutritional security and environmental protection**."

ACTIVITIES

- National Consultations & Academic-Government Dialogues
- Laos, Philippines and Thailand - pilot countries
- "Write-shops" & Policy Brief Drafting

WEBSITE (Home Page) www.siani.se/expert-groups/hesa (See "***Resources***" page, with Document Repository)

Chula-HESA Activities (2015)
CONTEXTS/QUESTIONS & POLICY BRIEFS

CONTEXTS & QUESTIONS

- In Southeast Asia some 6500 higher education institutions exist.
- BUT…**little published research exists** on how **universities** or colleges serve farmers or rural communities through **extension programs** or **academic-farmer partnerships,** support sustainable agriculture or food security.
- SO…**How** can Southeast Asian **universities** better **contribute to a paradigm shift** towards sustainable agriculture and rural development?

HESA-SIANI POLICY BRIEFS IN RESPONSE

- Based on National Workshops and Expert Group Document Drafting in 3 Pilot Countries
- Identified Curriculum, Policy and Research Needs/Gaps including Post Secondary Capacities and Rural Extension/Advisory Services -
- Discussed Needs/Knowledge (& Practice) Gaps with Policy & Action Recommendations

LAOS, PHILIPPINES & THAILAND
3 Pilot Studies 2015/Policy Brief 2016 Publications

HESA-SIANI Policy Briefs/Published Online

For Laos -- Philippines -- Thailand

http://www.siani.se/expert-groups/higher-education-sustainable-agriculture-hesa-southeast-asia/resources

SIANI

Higher Education for Sustainable Agriculture:
Working for food and nutrition security in the Philippines

Policy Brief
March 2016

This Policy Brief describes the state of the art in agriculture education in the Philippines, provides an overview of the environmental concerns linked to agriculture in the country and the implications for higher education, and makes recommendations on how to resolve national agro-environmental issues and improve higher education in order to increase the sustainability of agriculture. The Brief contains recommendations by the SIANI Higher Education for Sustainable Agriculture (HESA) Philippines Experts' Group, made at a two-day dialogue and 'write-shop' held at the University of the Philippines, Diliman Campus, on 22–23 July 2015.

Background and Rationale

Higher education institutions in the Philippines must undertake better research, improve their teaching and support enhanced extension services in order to provide a more effective response to the many environmental and agriculture- and development-related concerns in the country. The current state of higher education is not adequate to the task of addressing the many environmental, economic and social problems associated with mainstream approaches to industrial agriculture. The Philippines faces many complex global and national environmental problems linked to its agriculture.

The widespread and indiscriminate use of chemical fertilizers, hybrid seeds and pesticides, for example, leads to various environmental and health-related hazards and socio-economic problems. Worldwide food and agricultural trends are exacerbating the global ecological crisis. It has been estimated that 34 per cent of greenhouse gas emissions are linked to food production. Soils are also being degraded and eroded or made more acidic, decreasing the supply of nutrients for crop uptake. Farmers must then apply more fertilizers and pesticides to maintain or increase yields, while pests develop resistance. Pesticide residues in the food chain and ecosystem also threaten human health, ranging from increased incidence of cancers to food poisoning. Not all such health problems can be attributed to agriculture alone, but some correlations to various types of disease are suggestive. There is substantial evidence of well documented problems, such as the ingestion of toxic pesticides in food in the Philippines and elsewhere in Asia.

As the population of the world increases, the amount of grain being grown per person is declining. The Green Revolution of the 1960s was a package of technological innovations designed to increase agricultural yields. It consisted of the use of high-yielding varieties, fertilizers and pesticides, and was initially focused on rice growing in the humid tropics of Asia in order to address a predicted rice shortage. The strategy was later expanded to all crops, including aquaculture. Agricultural crop and livestock yields increased, averting Malthusian concerns about an impending food crisis.

Today, however, at least 800 million people still go hungry, and about 150 million children under the age of five are severely undernourished. Such problems could intensify if the world population increases as predicted from the current 6.7 billion to 9.2 billion by 2050.

At the same time, the widespread adoption of sustainable agricultural practices in the Philippines, across the ASEAN region

Winnowing Rice by Hand - Rice Preparation in Philippines. Photo by Daniel Beckham via Flickr CC BY-NC-SA 2.0

and worldwide could help to increase resilience to climate change and improve climate change mitigation and adaptation measures. It is essential to promote and support truly sustainable agriculture based on local soil and climate conditions, as well as local traditions and culture. Agro-ecological systems and practices should reflect these ties.

However, a shift to sustainable agriculture will require local government entities, community-based family farms and cooperatives to have access to more information, and better education and communication on sustainable agriculture, as well as support to get access to technology and best organic farming and manufacturing practices. There is also a need to operationalize comprehensive agricultural extension and training support services for small-scale family farms.

The Need for a Response from Higher Education Institutions

In response to such environment-, health-, and agriculture-related development challenges, the SIANI Higher Education for Sustainable Agriculture (HESA) Philippines Experts Group held a two-day dialogue and write-shop in July 2015. The dialogue was facilitated by SIANI-HESA and the Food Security in Southeast Asia Experts' Group Project. The dialogue aimed to ascertain the status of courses on sustainable agriculture and food security in higher education institutions (HEIs) and state universities and colleges (SUCs) across the Philippines.

SIANI.se

UNIVERSITY-Based RURAL EXTENSION SERVICES
SE Asian Needs/Policy Recommendations (from HESA 2015 Project)

UNIVERSITY RURAL EXTENSION SERVICE HESA PROJECT RECOMMENDATIONS

1. **LAOS**
   - New type of agricultural extension worker/needed (Practice-, market- business-oriented)
   - A pilot project called for on vocational training for sustainable agriculture

2. **PHILIPPINES**
   - Need to operationalize comprehensive agricultural extension and training support services for small-scale family farms
   - Strengthening university-farmer partnerships can help Farmer-led, scientist-supported and community-based technology transfer for improved farm productivity
   - Combine modern science/technology with farmers' traditional knowledge and experiential learning
   - Extension activities must be given workload credits on par with instruction and research.
   - Universities need to conduct extension services in their respective agro-ecological zones.

3. **THAILAND**
   - improved documentation is essential to help better **assess** existing **capacities** and new **needs** of sustainable agriculture programmes, curricula and research
   - Knowledge and understanding are needed on how to implement **sustainable agriculture** policies and curricula by Thai scholars and universities or their **extension services**
   - **Self-interest or pursuit of profit**, instead of prioritizing community well-being… adversely **affect** farmers' knowledge and the provision of **extension services**
   - More **systematic study** of the **sustainable agriculture** teaching, as well as of the research and service provision by universities and colleges in Thailand, could **guide** curriculum reform, research and improvements in **extension service**

6. New Chula-led
ASEAN Extension Research

6. New Chula ASEAN Extension Research Project
(June 2016 – May 2017)

New Chula ASEAN Extension Research Project (June 2016 – May 2017)

New Project underway (1 June 2016 – 31 May 2017)

- UNISEARCH Fund "ASEAN Cluster" Project initially approved ***"Mapping and Assessing University-based Farmer Extension Services in ASEAN through an Agro-ecological/Organic Lens"*** (with AliSEA, UNESCO and ASC supplementary support)

- **FOCUS:**
  - **> Tier1:** Indonesia, Laos, Philippines, Thailand and Viet Nam; and
  - **> Tier 2** Cambodia, Malaysia and Myanmar (now with additional funding)
  - > **Representing**: 5 to 8 countries with strong agriculture economies in ASEAN.

Planned Project Outputs:

- Surveys (with new baseline data) of university-based extension (up to 8 national)
- Policy Brief(s)- 1 or more
- Journal Articles – 1 or more. SCOPUS-indexed, good quality submitted for peer review
- Edited book of National Case Studies and other papers (Workshop proceedings)

National & Regional Extension Research Workshops and Activities with Partners (2016-2017 Schedule)

Extension Research Project Workshops

- **Viet Nam** (16 June 2016 Workshop) Thurs, Hosted by International Center for Tropical Agriculture (CIAT/CGIAR) Asia Regional Office Hanoi
- **Philippines** (7 July 2016 Workshop) Thurs, Hosted by University of the Philippines Los Baños(UPLB);
- **Laos** (14 July 2016 Workshop) Thurs, Vientiane hosted by ALiSEA/GRET
- **Indonesia** (21 July, 2016 Workshop) Thurs, Hosted by Bogor Agricultural University,
- **Thailand** (24 August, 2016) Wed, Hosted by CUSAR/Chula Bangkok
- **Viet Nam** (13 Dec 2016 Workshop Can Tho University (Southern Viet Nam)
- **Cambodia** (21 Dec 2016) Royal University of Agriculture (RUA), Phnom Penh, Cambodia workshop
- **Myanmar** (25 Jan 2017), Yezin Agricultural University (YAU), Naypyitaw workshop

Regional Research Workshop (23 Feb 2017), Bangkok

- Hosted by CUSAR/Chula
- Survey Reporting & Data Exchange from all national meetings (and focal points)
- Papers (on national surveys and analysis) to be presented

TARGETED OUTPUTS & RESULTS
(Realistic? Or Desired/Hoped for)

Desired Outcomes and Results Expected (from Process and Outputs)

- More and Better **Baseline Data** on University-based Extension Services in ASEAN countries

- **Completed surveys** (Students, Graduates and Faculty) documenting extension institutions, knowledge, activities, and programs In ASEAN (**MONKEY SURVEY** underway now to begin)

- **Useable Knowledge**/Empirical Evidence (of capacities, programs and issues) to better Inform Policy dialogue, reforms, and curriculum development. This can also aid national SDG reporting (based on project defined indicators and measurable results)

- **Practical reforms** or Strengthening/Scaling-up of existing OA/AE Knowledge, planning documents and budgets for Post-Secondary Extension Services

- **Planning** of realistic (and newly funded) new/larger regional **extension research projects**

- New Institutional knowledge **Reforms** leading (eventually?) to specific **development Impacts:**

    1. Reduced use of (unnecessary) agrochemicals by farmers and harm to environments
    2. Cost savings by governments and farmers (due to fewer external inputs or health costs)
    3. Safer, Healthier and more food secure communities
    4. Stronger university-farmer research partnerships and knowledge exchanges through improved extension services in local communities and agro-ecologies
    5. Increased incomes in farm communities through sales of higher value OA/AE products.

Potential for Longer Term Better funded Extension Research?– (Project Planning in Wider ASEAN Educational Contexts)

Current Challenges/Contexts

- Il-defined (yet) Research agenda to understand/apply Agro-ecological/Organic knowledge
- Inadequate Funding for Current or Desired Research and new Curricula
- Lack of Integration or interdisciplinary Cooperation among Research, Education and Extension Agendas (e.g. agriculture, environment, rural development)

Future/Envisioning and Planning

- Reforms and Projects better designed to link education, research and university extension services with achieving agro-ecological/organic and rural sustainability outputs and SDGs

Potential Links/Strengthened synergies with ASEAN (and SEAMEO) Regional 5 Year Planning, E.g.

- ***ASEAN WORK PLAN ON EDUCATION 2016-2020*** (adopted May 2016)
- A comprehensive *Report on* ***State of Social and Sustainability Sciences in ASEAN*** (tentatively to include a chapter on Agriculture Education and Extension?)
- ***ASEAN INTEGRATED FOOD SECURITY (AIFS) FRAMEWORK AND STRATEGIC PLAN OF ACTION ON FOOD SECURITY IN THE ASEAN REGION (SPA-FS) 2015-2020***
- ***VISION AND STRATEGIC PLAN FOR ASEAN COOPERATION IN FOOD, AGRICULTURE AND FORESTRY (2016-2025*)**

7. Other/discussion - END

7. Other/discussion

Questions-Comments?

END

Thank you