

# **“Achieving SDGs and the ASEAN Work-Plan on Education, 2016-2020 Through Strengthening Higher Education for Sustainable Agriculture (HESA) and Food Systems in Southeast Asia”**

## **A PHILIPPINES ACADEMIC-GOVERNMENT-FARMER-AGENCY POLICY DIALOGUE**

Date: Thursday 03 August 2017

Venue: University Hotel, UP Diliman Campus, Quezon City Time: 8:30 am to 5:00 PM

### **Proceedings**

The Program started at 9:15 AM and ended at 5:20 PM.

**Dr. Wayne Nelles** gave a brief overview of the meeting. He said that the small workshop is one of a few national and sub-regional activities planned for Phase 2 (2017-2018) of the **SIANI Expert Group on Higher Education for Sustainable Agriculture (HESA) and Food Systems in Southeast Asia** funded by the Swedish International Agricultural Network Initiative (SIANI) and Swedish International Development Cooperation Agency (SIDA) with additional support from local partners or other co-sponsors. HESA-SIANI Expert Group Members for 2017-2018 represent a network of around 17 National Focal Point Team members with 2 or 3 academic leaders from universities in the 8 ASEAN Member States (Cambodia, Indonesia, Laos, Malaysia, Myanmar, Philippines, Thailand and Vietnam) which have strong rural and agriculture based economies. The HESA-SIANI network is hosted and led by Chulalongkorn University. The four main aims of the HESA-SIANI Expert Group Phase 2 are as follows:

- 1. To facilitate** academic debate and policy dialogue on how to design, improve, innovate and better finance sustainable agri-food system curricula, teaching, research and farmer extension programs in SE Asian universities and colleges and technical training institutes.
- 2. Discuss** how university experts collaborating with various national or regional research organizations, farmer-scientist networks and other partners can help governments and international agencies implement, monitor and evaluate United Nations Sustainable Development Goals (SDGs), particularly SDG2 - *“End hunger, achieve food security and improved nutrition and promote sustainable agriculture”* together with SDG4 – *“Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all.”* Such discussion and analysis will also be done in a cross-cutting way to identify gaps while assessing and reinforcing SDG 2 and 4 synergies among other SDGs from reducing rural poverty to promoting health and gender equality, to creating greener jobs based on sustainable agri-food system production and consumption; to preventing land degradation or biodiversity loss while mitigating or adapting to climate change.
- 3. Make Recommendations** (to university administrators, government and regional organizations) that will help in the design and implement agri-food system component to the *ASEAN Work Plan on Education (AWPE), 2016-2020*. The output will be included in the HESA-SIANI Summary Report (in 2018) and will be forwarded to the ASEAN

Secretariat Education, Youth and Sport Division as well as through other channels including but not limited to ASEAN Senior Officials Meetings on Education (SOM-ED) Senior Agriculture officials and university leaders, UN agencies and others in Southeast Asia.

- 4. Propose specific project ideas** for multi-year research, education, capacity development and extension activities on sustainable agriculture and food systems for Higher Education Institutions (HEIs) within and across Southeast Asia; and to improve government policies and public investments in Higher Agriculture Education (HAE).

He said that we can help in achieving the SDGs and the ASEAN Work Plan on Education, 2016-2020 thru assessing and strengthening Higher Education for Sustainable Agriculture (HESA) and Food Systems in Southeast Asia”.

The Reality: The carrying capacity of the planet cannot sustain the growing population

Issues: Climate related, environment -related and many more. SA, research and farmer extension education are not mentioned in SDG 2; in SDG 4, there is no mention of agri education as well; food insecurity is still a problem, who will be going to feed us with few young people going to agriculture.

Possible Solutions: Need a paradigm shift in agricultural development. But are the academe part of the problem or part of the solution? There is a need for greening the university agri-food education in the ASEAN to contribute to global SDG. And HESA 2 under AWPE Social and sustainability sciences project 45 opens the potential for agri-food system sciences.

Suggested discussion points for the speakers:

1. Strengths and weaknesses, opportunities and threats (SWOT) of HAE in the Philippines and/or ASEAN region
2. Specific recommendations to improve government policies and public investments in HAE (for the PHILIPPINES) to support greater environmental, social and economic sustainability.
3. Assessment of needs and recommendations about how to improve ASEAN policies, programs, and regional collaboration for HAE
4. How HAE can or should meet any of the SDGs (SDG 2 especially but also SD4 as well as others cross-cutting) through better curriculum, research opportunities and extension services, particularly collaborating with farmers and local communities, and how to support youth to have decent, environmentally friendly agri-food careers after graduating from their course.
5. Specific project ideas for multi-year research, education, capacity development and extension activities on sustainable agriculture and food systems for HAEs in the Philippines and across Southeast Asia that can be suggested as a contribution to the AWPE, 2016-2020 (subject to new funding, etc) potentially in partnership with other ASEAN countries and institutions.

Aside or complementary to the above, panelists were requested to make any other recommendations on HAE that could be directed to university administrators, government and regional organizations generally. It was mentioned that after all presentations, all participants will be enjoined to discuss their ideas and recommendations in more detail, while recapping salient points in presentations during the day.

Dr. Ted Mendoza led the opening prayer and singing of the Pambansang awit. This was followed by the self - introduction of participants, as follows:

1. Dr. Teodoro MENDOZA, Prof 12, Institute of Crop Science (iCropS), College of Agriculture, UPLB ,UP Scientist 2, Board of Trustee(Academic sector), PhilRice, Philippines SIANI-HESA Expert Group Coordinator
2. Earwin BELEN – YPARD Philippines, Young Entrepreneur
3. Mr. Isagani R. SERRANO, President, Philippine Rural Reconstruction Movement (PRRM)
4. Ms. Zacyl R. JALOTJOT, Program Specialist, Graduate Education and Institutional Development Department. SEAMEO-SEARCA
5. Dr. Maria Cristeta N. CUARESMA Program Head, Graduate Education and Institutional Development, SEAMEO-SEARCA
6. Dr. Cely S. BINOYA, Executive Director, APEAEN
7. Dr. Marissa R. PARAO, Dean, College of Forestry, Benguet State University
8. Dr. Nathan ALIBUYOG – VP Research, Development and Extension, Mariano Marcos State University
9. Dr. Ernesto MARTIN, Dean, College of Agriculture, CLSU
10. Jim Leandro CANO - YPARD Philippines
11. Dr. Roselyn PAELMO Asst.Professor, Institute of Crop Science (iCropS), UPLB
12. Ma Fatima MERCADO, Associate Professor, iCropS, UPLB
13. Dr. Virginia CARDENAS – GFRAS and Coordinator of APIRAS and Dean of CPAF, UPLB,
14. Dr. Andrew GASMEN – ATI
15. Dr. Anadem EBILLO, Pres., Zamboanga Del Sur Prov. Agriculture College
16. Dr. Dani JOSUE - MSU Maguindanao
17. Dr. Joy Membreve JAMAGO, Department of Agronomy and Plant Breeding. Central Mindanao University
18. Mr. Roel RAVANERA, Consultant, Food and Agriculture Organization of the United Nations (FAO), Philippines Office and Professor, Xavier University
19. Mr. Cris PANERIO, National Coordinator, MASIPAG – Farmer Scientist Partnership for Development
20. Ms. Daisy LAGENNEGER – Caretaker of 1930's family farm, Chairman of the Phil. Permaculture Association
21. Ms. Arze GLIPO, Executive Director, Integrated Rural Development Foundation (IRDF)
22. Dr. Napoleon K. JUANILLO, Jr., Director, Office of Research and Knowledge Management, Commission on Higher Education (CHED)

23. Dr. Wayne NELLES, Canadian Visiting Scholar, CUSAR Bangkok – Regional SIANI-HESA Expert Group Coordinator
24. Dr. Josephine CRUZ – VP for Research, Extension and Enterprise Devt., CBSUA
25. Mr. Rizal CORALES, Manager, PhilRice Stn. Murcia, Negros Occidental, Philippines
26. Mr. Clint HASSAN, Director, DA-ICTS, information and communication technology (ICT)-enabled initiatives Department of Agriculture (DA)
27. Mr. Jonjon SARMIENTO, Sustainable Agriculture Program Manager, National Movement of Farmers Organizations or PAKISAMA; and Asian Farmers' Association for Sustainable Rural Development (AFA)
28. Rico TABAL, On study leave, Asst. Professor, West Mindanao State University, Graduate Student, UPLB
29. Mr. Pablito VILLEGAS, Practicing Smallholder Farmer/Agri-Entrepreneur; Chairperson Sustainable and Agro-Ecological Farming Systems, PCAFI, and Vice Chair, Countryside Builders' Multi-Purpose Coop
30. Essex Ram Ones LARA, CREDO
31. Dr. Artemio A. MARTIN, Jr. Campus Director, Extension and Training, Isabela State University
32. Dr. Chona Y. Fontelo JAVIER, Dean, Silliman University College of Agriculture

Since the representative from CHED arrived just in time for the introduction of participants, the program proceeded as planned.

**Panel 1. GOVERNMENT POLICIES, PERSPECTIVES and PLANs** on Achieving SDGs and Strengthening Higher Education for Sustainable Agriculture (HESA) and Food Systems in the Philippines and Southeast Asia

**MODERATOR: Dr. Joy Membreve JAMAGO**, Department of Agronomy and Plant Breeding. Central Mindanao University

**Dr. Napoleon Juanillo, CHED.** He mentioned that CHED's support in the context of SDG 4 is to provide funds for inclusive research to look at the issues more profoundly. CHED also promotes collaborative research not only for agriculture but in a more holistic manner; the interconnectivity of the SDGs, not only on agricultural productivity but also on health, gender, and other issues across the SDGs. The academe is expected to use the funds to discover knowledge in looking for solutions to problems.

He also mentioned that enrolment in agriculture is at the lowest, compared to other courses. Even in advance education for agriculture, it's in the flatline so the expectation is, there are no new agricultural scientists in the near future. Re: normative financing formula for SUCs, it has to be look back to its mandate, so if a state university or college is an agricultural; college, the budget must just be used to finance the program. But the problem is, most SUCs have offered many other courses and the agriculture courses have been left out. Developing intellectual assets must be a priority of HE, but for what purpose in particular for the Philippines HEIs. Also, the CHED and SEARCA are receiving poor quality proposals, no pipeline, the mentors are ageing, the

professors are dying. Hence, he encourage the audience to join the Commission in lobbying for producing intellectual outputs, and to participate in national and global discourse.

We are doing all we can to channel investments in food and nutrition security, we try to collectively look at things holistically but this is battled by lack of enrollees and lack of professors. This discourse needs a lot of thinking. We are investing on senior high school who will go into agriculture. There are 1,934 HEIs in the country, both public and private, that are supposed to produce intellectual assets but they are not doing their job; and we got to help CHED because it is being highly politicized.

### **Dr. Andrew Gasmen, Chief, Policy and Standards Devt. Section, Agricultural Training Institute**

He introduced his agency as the lead agency for agricultural and fisheries extension. Its functions include setting the extension agenda, developing extension policies and implementing extension programs and projects. Its mission is to empower and build capacities for sustainable development. Its resources include 16 Training Centers, 1 intl. training center, and regional offices all over the country.

ATI's perspective to achieve SDGs

- Strong, well capacitated human resources
- Pluralism in extension
- Ext. delivery system : knowledge devt – knowledge dissemination – knowledge utilization
- Delineation of ext services – natl, private and local govt.

Role of State Colleges and Universities:

- Improvement of the extension capabilities of LGUs
  - Degree and non-degree programs
  - Technical assistance
  - Extension and research activities
  - Monitoring and evaluation of extension projects
  - Information support services

Recommendations:

- More objective consultations to generate appropriate and need-based information as basis for sound policies
- Build strategic alliances from different sectors for the improvement of the agriculture curricula

Contraints:

Imbalance on the incentives on research vs. extension

Possible Collaborations of SUCs and ATI

1. Academe will serve as resource persons
2. Conduct of innovation studies
3. Use of resources for technology demonstration
4. Evaluation studies of extension programs

Capacity building for the “New Extensionist” by adapting the “AgriDOC” model and initiating discussions between SUCs and ATI in improving the existing curricula.

### **Open Forum**

For ATI, Dr. Ted suggested to change the name of ATI to Bureau of Agricultural Extension. Question for Dr. Juanillo, What are the gaps in research and extension? When a student graduates from a course, and pass the Licensure Exam for Agriculture, what’s in store for the graduate? How do we get the youth to go into agriculture and contribute to national development.

**Dr. Nap** – The licensed graduates can practice their profession like any other professionals. And there is no limit in what they can do. He said that he is a graduate of a Ph.D. in Agriculture but he is the President of a hospital in Naga City. The new century graduates have lots of talents, which they can use in any job. Actually, the problem really is how to make the SUCs to go back to its original mandate. We have to advocate to these colleges to go back to their mandates; advocate to the leaders to influence the schools to go back to their original mandates. APEC STEM has this innovation mobility card for intellectual collaboration among ASEAN members, holders can be allowed access to collaborating countries. But PRC hindered its approval.

### **Panel 2 - ACADEMIC PERSPECTIVES, PROJECTS, NETWORKS and PARTNERSHIPS on Achieving SDGs and Strengthening Higher Education for Sustainable Agriculture (HESA) and Food Systems in the Philippines and Southeast Asia**

**MODERATOR: Dr. Marissa PARAO**, Dean, College of Forestry, Benguet State University

- **Dr. Cely S. BINOYA**, Executive Director, Asia-Pacific Association of Educators in Agriculture and Environment (APEAEN).
- **Dr. Virginia CARDENAS**, Coordinator, Asia Pacific Island Rural Advisory Services (APIRAS) Network/Global Forum for Rural Advisory Services (GFRAS) Asia-Pacific; and Dean of College of Public Affairs and Development. University of the Philippines Los Baños (UPLB)
- **Dr. Teodoro MENDOZA**, Professor 12, Crop Science, College of Agriculture, UPLB Reforming/Strengthening Agri-Food Education and Extension in Philippine Universities

**Dr. Cely Binoya, Executive Director, APEAEN.** She gave a brief introduction about APEAEN, its vision and mission and the projects being undertaken by the association. Then she presented a SWOT analysis of HEI for Agriculture in the country, as follows:

**On the strengths:** There are Phil. HEIs dedicated in offering agriculture courses; there is an active Association of Colleges of Agriculture in the Philippines with 35 member schools; there are also Association of Agri. Professionals (PASSASE, PAEPI, AFEN, PhilEASNet, PSAE, etc. ); CHED has issued Memo Orders that standardize curricular offerings in agriculture; there is a school that offers BSA major in Organic Agriculture (BSU), and BS in Agri-EcoTourism Mgt. (CBSUA); HEIs in the country perform 4 functions: instruction, research, extension and production; strong support by government to the agriculture sector; there is an organized National Organic Agriculture Board.

**Weaknesses:** Low enrolment in agriculture and agri-related courses; low passing percentage in licensure exam for agriculture; very few schools are offering agriculture courses (35 out of 112 SUCs); only one school offers BSA major in Organic Agriculture, only one school offers BSA major in Sustainable Agriculture, and one school offers BS in Agri-EcoTourism Mgt.; agriculture courses have few subjects towards the practice of sustainable agriculture, e.g. 3 unit course on Introduction to Sustainable Agriculture.

**Opportunities:** ASEAN 2020; this Country meeting on HAE in the Philippines and in the ASEAN Region which opened this opportunity for us to engage relevant people in this intellectual discourse; many organized groups of professionals in the field of Agriculture; and there are organized groups of Organic Producers of Farm Products which are active in social media.

**Threats:** Climate Change and Disasters; continuous promotion of traditional agriculture highly loaded with the use of chemical inputs even among agricultural colleges and universities, at the DA and other line agencies

**Specific recommendations to improve government policies and public investments in HAE (for the PHILIPPINES) to support greater environmental, social and economic sustainability.**

- Monitor and evaluate the implementation of the Organic Agriculture Act of 2010
- Promote the nationwide offering of BSA, major in Sustainable Agriculture and BSA major in Organic Agriculture, and BS in Agri-EcoTourism Management and develop the CMO for these courses with CHED and ACAP –member schools collaborating for this purpose
- Promote academe – industry linkage to make students’ research and internship experiential and more rewarding for the students, the school and the organic farms
- All HEIs in Agriculture must establish an Agri-Eco Farm to showcase organic agriculture technologies that are generating income while ensuring healthy options for the consumers

- For HEIs in Agriculture to set up radio and TV programs to promote sustainable / organic agriculture practices

### **Recommendations to improve ASEAN policies, programs, and regional collaboration for HAE**

- To improve ASEAN policies and programs for HAE, participate in dialogues like this engaging major key players in agriculture and the educators to bridge the gap between what the school offers and what the industry needs with respect to graduates' competencies
- Promote / Patronize programs and projects of relevant international organizations of Agriculture Education Professionals like the APEAEN, APIRAS, APEN, AAIEE
- Anchor theme and subthemes of international conferences on the SDG 2 and 4 and cross-cutting concerns

### **APEAEN Perspective on how HAE could meet the SDG 2 through better curriculum, research opportunities and extension services**

1. Develop a program on Agricultural Sustainability through Climate Change Mitigation and Adaptation with 6 key result areas (KRAs)
  - KRA 1 - formation of community-based cooperatives which includes research and cooperative education activities
  - KRA 2 - agricultural education and agri-technology popularization & commercialization composed of trainings, IEC material development, production and dissemination, science and technology advisorship, and technology transfer activities
  - KRA 3 - collaboration of farm families to institutions which include public-private partnership, establishment of SA model farm, and marketing linkages
  - KRA 4 - community engagement which focuses on community organizing
  - KRA 5 - capacity building for internal farmer-leaders; and identification of potential internal leaders, trainings, and formation of core farmer groups
  - KRA 6 – enhance governance in research, and review and formulation of policies on SA
2. Curricular reform to address concern for SA, food and nutrition security, climate change adaptation and disaster risk reduction and preparedness for the agriculture sector and gender perspective integration in agriculture and rural development studies
  - a. Basic Education - include concepts on environmental education, SA, food security and nutrition, organic agriculture, climate change, and disaster risk reduction in the curriculum.

Mode of Integration:



1. infusion in the curriculum of the different SA concepts in almost all subjects;
  2. intra, extra and co-curricular activities related to CC, DR, OA etc. like laboratory working class activities, projects, students organization activities outside their school, agro-coaching/ introducing agriculture in nearby schools, and forming organizations whose advocacy is on organic agriculture, food security, DRR and CCA;
  3. practical exposure of students in the different concepts on sustainable agriculture, DRR, CCA and food security;
  4. responsibility of each SUCs to build a community on go organics, CCA/DRR awareness and mitigation, food security; and
  5. increase awareness of parents in sustainable agriculture, CCA, DRR, food security, etc.
- b. Interventions in Tertiary Education:
1. capacitation or retooling of faculty on the concepts of SA, CCA, DRR, food security, etc.;
  2. encourage the conduct of R&D on SA, CCA, DRR, food security, and other related concepts;
  3. facilities upgrading in schools;
  4. students' exchange program; and
  5. realignment of subjects to address the needs of the industries.
3. Identified technologies, products, and services that can be utilized by stakeholders for the advancement of agriculture education, research, and extension for SA, food production and nutrition security, including OA for farming communities, in the Asia- Pacific countries

**Research Agenda 1 - Social Entrepreneurship:** 1) new perspectives in SA supply chain and value chain management; 2) agri-ecotourism; 3) new investments in agribusiness; 4) internationalization of agribusiness; 5) entrepreneurship and regional cooperation; 6) farm family entrepreneurship, and 7) MEs and fair trade practice

**Research Agenda 2 - Policy Development Studies:** 1) agro-entrepreneurship; 2) sustainable agriculture, and 3) incentive system and government support to farmers.

**Research Agenda 3 – Food and Nutrition Security & Safety and Climate Change:** 1) quantum agriculture; 2) sufficiency farming; 3) indigenous vegetable enhanced product; 4) farming systems development in marginal lands and adverse environments; 5) food and non-food product development; 6) organic probiotic foods; 7) innovations in food chain; and 8) ethics and responsible farming system.

**Research Agenda 4 –Human Empowerment:** 1) indigenous science models; 2) IKS: science and technology; 3) ethnoveterinary medicine; 4) ethno-ceuticals; 5) changing consumer's behavior towards organic products; and 6) gender and development.

**Research Agenda 5 - Environmental Management:** 1) Land Degradation Studies; 2) Watershed Management; 3) Soil and Water Conservation; 4) Biodiversity Conservation, and 5) Pollution and Waste Management.

An invitation was extended for the 7<sup>th</sup> APEAEN International Conference in mid- August, 2018 at Tokyo University of Agriculture, Japan with the theme: “APEAEN in 2020 and Beyond: Building and Promoting Community of Practice Towards Sustainable Rural Development in Asia and the Pacific”

**Dr. Virginia Cardenas-** APIRAS, GFRAS and Dean, CPAf – UPLB

APIRAS’ Role in Strengthening Rural Advisory Services Within Asia-Pacific Region

The “New Extension” is the expanded role of the Extension and Advisory Services, building organizational and systems-level capabilities that implies changes in EAS organizations, systems, and enabling environments, and reskilling all types of individuals to better contribute to increasing productivity and effectiveness of agricultural systems to improve the livelihood of smallholder farmers.

The SAAS Project (Supporting Smallholder Farmers in Asia and Pacific Islands Region through Strengthened Agricultural Advisory Services) will strengthen the regional and sub-regional Agricultural Advisory Services (AAS) networks, responding to the demands and assessing the current existing models, innovations, policies, and practices in the provision of AAS.

This will further direct the intellectual assets.

**Dr. Teodoro Mendoza – Professor 12, UPLB.** He discussed how HAE can be transformed into Higher Education for Sustainable Agriculture (HESA) and Food Systems in Southeast Asia to help achieve SDG2 & 4 and the ASEAN Work-Plan on Education, 2016-2020. He started by discussing the strengths and weaknesses of HAE in the Philippines.

**Strength** – highly populated, 12<sup>th</sup> most populated country in the world, more than 3x the carrying capacity of the country, scholarship programs available . There are many laws i.e RA 7722 that established the Commission on Higher education (CHED), RA 10068- the organic agriculture act. There are many institutions of higher education in the Philippines ( 2299). There are still many SCU’s (131 SCU’s) offering BSA although before there were more than 300 of them.

**Weakness-** low turn-out of PhD in S/T ( 100 more or less, 1000 bar passers),Declining enrollment in Agri related fields ,“Brain drain” more than 5,000 S/T personnel leave for country yearly (includes medical fields), OFW (Overseas Filipino Workers) is the HUGE source of revenue (26% of GNP)but leads to many social problems, skilled workers are leaving to earn higher pay, that HAE is mainly for chemical agriculture ( except-BSU, CBSUA),SLOW adoption of OA despite R.A 10068. *Agriculture is not a standalone industry.*

Many requirements in the agri+food systems are not addressed( labor saving/productivity enhancing equipment , tools, machines etc. )

### **Recommendations for improving government policies/ public investment in HAE**

1. HESA +ASEAN collaboration is imperative . Funding agencies( SEARCA, FAO) should influence HAE to be transformed to HESA (HESA for Rural Development) through their scholarship ie. providing “Scholarships grant for HESA – Organic Agric.; Influence curriculum changes/institution of courses/degree programs ( Change is oftentimes FUND driven... or we allow nature to intervene “ If there are students, the teacher will come”. This may take more years. What do we adopt as teaching pedagogy “ Learner – centered, demand-centered education (pedagogy of education, the other is teacher-centered).The UNESCO suggestion at 6% of GDP for Education Budget must be adopted in the ASEAN region.While for the Philippines it increased a bit from 2.7% ( 2000’s ) to 3.9% for 2018 proposed budget, it is still lower than the 6% UNESCO recommendation.
2. Philippine has more than 30,000 laws . There are many laws supportive to Sustainable Agriculture education Some of them are as follows : Clean Air Act, Zero waste/Ecological/Solid Waste Mgt. Act, Climate Change Act, Renewable Energy Act, Higher Education Act (RA 7722), R.A 10068. What is needed is Implementation, monitoring; Coherence and integration.
3. Filipinos love technologies/gadgets but we simply import all of them. Dr. R. Lantican made assessment of technology expressed as Technology index (Ti) . If USA Ti = 100, Japan Ti=87; Philippines Ti = 0.3 ( The Philippines is more than 300 years behind). *Agriculture is not a stand alone industry. The Agri + Food systems need equipment, tools, machine , hauling trucks, ships, trains etc. Yes, the country has the Philippine Agriculture and Fisheries Mechanization Act (PhilMech) . But the law has no budget. The Philippines continues and many other ASEAN countries ( except Singapore, Malaysia , Thailand and Indonesia are catching up also ) to just be “Technology users – not developers/manufacturers”.* The root cause is related to investment in R/D called Gross Expenses on R&D (GERD). As follows are the GERD of some selected countries; Japan and Republic of Korea=3.4% of GDP in 2007,Singapore (3.7%), USA=2.7 % and Australia (2.4%). China increased its R&D investment from 0.6% to 1.5% of GDP from 1996 to 2008. The Philippines’ GERD =0.2% (Paderanga,2012; 0.12%(Saloma,2010). UNESCO recommends 1% of GDP for GERD. This translates to very low spending per capita in the Philippines (@ \$1.43/Filipino ) compared to other countries as follows : Singapore =\$1,422;Japan =\$1,167 ; Republic of Korea =\$912; Australia =\$890 , China = \$90 per capita in 2008. In turn, this translates into very low S & T personnels or Researchers per 1 million .The Americas (North America and Latin America and the Caribbean, combined) = 2,010 , Europe = 2,639,Japan = 5,000 (2008); Singapore = 6,033 in 2008; Republic of Korea = 2,209; New Zealand

= 4,904 . The Philippines had 89(1987-1997) but this decreased to 78 (2007), the latest figure I could gather . In 2003 ,Germany had 1 Ph.D. / 3,316 Population , US had 1/ 6,533. 2003, while the Phil. Had only 1/100,000 Filipinos .

4. On Human Resource Development -The urgent task for HAE IS to respond critically and strategically assess the role of HRD and priority disciplines in teacher education, health-related, cyber-services, engineering, agriculture and entrepreneurship and maritime. We need to build our own ships , the Philippines being an archipelagic country(7,100 islands )
5. On Research- to be more proactive in mobilizing knowledge to directly contribute to productivity by re-orienting university-based research and development towards systematic and purposive utilization of research outputs to generate employment and support poverty reduction.
6. On Extension Services-Seize the current opportunity to assist national government to effect social, bureaucratic and fiscal reforms through HRD and effective and efficient management.It should be recognized that Rates of return to R&D is high due to the adoption of best practice which in turn lead to efficiency gains and greater output per unit of expense. R&D results spillover across different sectors and industries, including agriculture.
7. On Technology as the foundation of present and future economic development. For the Philippines (and the ASEAN).

Almost 3 decades back , Bloch (1988) said *“We are entering a new age, an age of knowledge, in which the key strategic resource necessary for prosperity has become knowledge itself – educated people, their ideas and innovation, and their entrepreneurial spirit”*.

There is a need to jointly review the institutional arrangements for coordinating the R & D activities of departments( ministries), agencies, academe, business sector and civil society organizations (CSO) and recommend appropriate regular and permanent institutional arrangement for coordinating and overseeing the allocation of R & D budgets to government departments, agencies and state colleges and universities with the objective of attaining private and public sector R & D funding increases to at least 1.0% of the country’s GDP by 2019.

The Philippines must craft a National industrial Policy as the basis of national economic development and the foundation of a stable , vibrant and robust economy and the template of a compliant, and globally competitive economy. Some of the features of the National Industrial Policy (NIP) include...

1. NIP harnesses the talents and capabilities of Filipino scientists (BEFORE OUTSOURCING THEM) in addressing local problems and providing solutions or measures that are .. adapted , adjusted , accessible , and affordable (4A’s of technology) to the end users - the domestic industries

2. NIP utilizes local natural resources (land, water, minerals, wood) and domestically produced products and transform them into value adding products for the market or buyers/ users here and abroad. Our primary industry Agriculture must be productive, resource use efficient and sustainable. Some Strategies and Action Plans for the Philippines include : 1. Revive our national steel industry- Start from mineral ore processing, R/D on metallurgy, Design engineering

It must be recognized that Agro-processing is machine-intensive. In the 60s to 70s, we started manufacturing our own tools, equipment, many parts of sugar mills are locally manufactured. There is a need to revive Republic Act No. 7103 "Iron and Steel Industry Act". This act ended its effectivity last 2006. It must be re enacted with amendments to upgrade it.

3. Fabricate, locally, basic tools/ tractor attachments at the minimum, our own engine in the long term. Sugarcane planters in Batangas have designed and locally fabricated a double row planter for sugarcane. PhilRice engineers have locally fabricated a rice combine and many more. Why import all machines, tools etc.?

REPUBLIC ACT NO. 9242 ( 2004). An Act Prescribing The Use Of The Philippine Tropical Fabrics For Uniforms Of Public Officials And Employees And For Other Purposes. A similar act must be legislated for tools, equipment and machineries that are made, fabricated, and manufactured in the Philippines.

S& T initiatives must be localized from *Production processing packaging*, Use of renewable energy- COGEN, WOOD biomass, Use of renewable/ green packaging materials. The Philippines need to operationalize fully R.A. 6959 which stipulates the establishments of provincial centers for S&T.

## Open Forum

**Additional insights from Earwin:** There are available scholarships but there is a need to check the status of the program (i.e. ACEF Scholarship Funds from Department of Agriculture). The utilization of these funds were questioned by Senator Cythia Villar. Aside from OA, maybe we can promote GAP as the middle ground between conventional and organic agriculture. Innovative technologies, such as precision agriculture and site specific agriculture (which are being done by PhilRice) should also be taught in the agricultural courses.

**Rico for Dr. Cardenas** on the character of a new extensionist, the character is inherent to a graduate but the system where the graduates are exposed to after graduation can make a difference in output. He suggested to check on the system/ practice going on in extension practice

**Dr. Gie.** It is really important to shift to become innovative thinkers, esp. among the important actors in extension, the extension providers. We have to look at the supply and demand of

extension work. It should become more problem-focused and demand-focused which is the focus of an on-going research, the result of the research will be presented in the PhilEASNet conference in Bagiuo.

**Dr. Ted.** I have no disagreement on the concept of New Extensionist. At UPLB, 60 % of the students are taking agro-biotechnology. Their earnings after taking agriculture is important that's why I am hesitant to develop a curriculum in OA because where will the graduates go after finishing the course?

**Riz.** I like the RD continuum, the SUCs are good venue for this. If we can only expand this by linking the SUCs with DA. For example, the palayamanan platform as enterprise development platform. On extension, even the SUCs are not doing real extension. PIDS study showed that highest investment goes to extension but where did the money go? Most of the money are used in infrastructure projects charged against the extension fund.

**Dr. Gie.** In creating demand for agriculture as a degree program, why don't you use the social media for creating advocacy for people to go to agriculture. We have many projects, I hope we go beyond piloting but, rather on institutionalization of programs. Institute rewards system – farmer scholarship and lobby for the passage of the National Extension Bill.

**Jonjon – Farmer.** We have to look into the peculiarity of the farms, climate, geographical location, etc. I like the concept of the New Extensionist. Extension should work towards rural development, engaging the farmers. There should be a holistic approach.

**Dani- MSU.** Focus also on the governance of LGUs.

**Dr. Cely.** There is problem with agricultural extension practice of LGUs, even with HEIs. I think this is because we have very few books in Agricultural Extension. I suggest that we organize a group of extension experts who should write this book. This was seconded by Mam Gie, Dr. Andrew and other participants.

**Panel 3. FARMER SCIENTISTS, NGO RESEARCH NETWORKS AND YOUTH PERSPECTIVES (On partnerships with Universities)** for Achieving SDGs and Strengthening Higher Education for Sustainable Agriculture (HESA) and Food Systems

**MODERATOR: Dr. Artemio A. MARTIN, Jr.** Campus Director, Extension and Training, Isabela State University

- **Mr. Cris PANERIO**, National Coordinator, MASIPAG - Farmer-Scientist Partnership for Development
- **Mr. Jonjon SARMIENTO**, Sustainable Agriculture Program Manager, or National Movement of Farmers Organizations or PAKISAMA (Pambansang Kilusan ng mga Samahang Magsaska) and representing Asian Farmers' Association for Sustainable Rural Development (AFA).

- **Ms. Arze GLIPO**, Exec Director, Integrated Rural Development Foundation (IRDF)
- **Mr. Jim Leandro P. CANO**, Country Representative, Young Professionals for Agricultural Development (YPARD) Philippines

**Ms. Arze GLIPO**, Exec Director, Integrated Rural Development Foundation (IRDF)

Vision: transform agriculture based rural areas

Main challenges of smallholders – landlessness, low productivity, corporate control of agriculture and food systems, trade liberalization and privatization policy, lack of jobs in the rural areas, land use conversion, climate change impacts and environmental degradation, weak agricultural extension due to lack of funds, devolution and mis-prioritization of LCEs,

Transforming food system: working towards food sovereignty and empowering producers – it needs institutional reform, priority on R&D, lifestyle change

IRDF's programs and strategies – contributing to the realization of food sovereignty and sustainable agriculture – organizing and social mobilization, policy advocacy and campaigns, promotion of sustainable farming technologies, building capacities of farmer organizations to participate in local governance, building resilient communities, and building alliances with NGAs, LGUs, CSOs, Academe, SUCS; policy advocacy; showcasing organic based technologies under coconuts

Needs in advancing farmer-led Sustainable Agriculture technology development and promotion

**Mr. Jim Leandro P. CANO**, Country Representative, Young Professionals for Agricultural Development (YPARD) Philippines

**Sustainable Agricultural Systems** means meeting today's needs with present resources. Without sacrificing future generations' access to these resources for their own development. The youth needs to understand the interactions in agricultural systems and should take an active role in addressing the problems and influencing key decisions in agricultural development.

Enrollment to agricultural undergraduate courses has been declining in the past years. This poses a problem in sustaining food production if the young people will not engage to agriculture.

YPARD Philippines proposes to work on the Five-fold strategy for agricultural development:

**Academe / Education.** There is a need to strengthen graduate scholarship with teaching load programs. Mentoring should also be done to aspiring youth by agricultural experts. Instruction must be relevant and quick to innovate. Publicly-funded Family Farm Schools for agriculture should also be established.

**Research and development.** Small research grants may be given to fresh graduates or individuals with TESDA National Certificates. Weightier incentives must be given to researches with clear societal benefit and sustainable development. There is also a need in agricultural labor supply-demand across ASEAN countries.

**Extension and Communication.** The use of ICT tools for extension and communication should be strengthened (e.g. smartphones, drones, retooling of extensionists). Social media and internet platforms must also be utilized and maximized. The youth must also be empowered to become extensionists by giving them access to trainings and resource materials (e.g. Infomediary Campaign of PhilRice).

**Policy Making / Government.** Strengthen promotion of agriculture through scholarships (e.g. ACEF Scholarship by DA). The youth-in-agriculture organizations must be allowed to significantly participate in agricultural development policies. There is also a need to create youth-in-agriculture development roadmap together with different government institutions.

**Agribusiness.** Regional youth agribusiness hubs for technology/business incubation must be established with the regional field offices linking with SUCs with competitive small grants. There should also be sustainable agri-market industry platform, such as real-time price watch and crop and animal traceability system. Urban and vertical agriculture should also be encouraged in urban areas to promote food security. Long-term coordinated study on human resource for agriculture across ASEAN should be done for forecasting of agricultural labor supply and demand. Gaps in academe and industry linkages must be identified and minimized through workshops, summits, platform development, curriculum development and revisions.

**Mr. Cris PANERIO**, National Coordinator, MASIPAG - Farmer-Scientist Partnership for Development

MASIPAG's early beginnings started with the BIGAS Conference in 1985 in UP Los Banos which probably popularized farmer-scientist partnerships in the Philippines.

One of MASIPAG's program is the conservation of rice biodiversity with and for the Filipino Farmers. Farmers are trained to lead and become rice breeders. Through this program, 119 trial farms has been established and maintained since 2015, has 20 active farmer rice breeders and has developed 169 rice varieties. MASIPAG rice varieties are said to be climate change resilient (salt-tolerant, flood and drought tolerant).

In a study conducted by Bachmann, et al (2009), the net agricultural income of MASIPAG organic farmers is significantly higher than those conventional farmers. Family food security and climate change resiliency can be achieved through diversified / integrated farming systems. Partnerships of the farmers and scientists facilitated the marketing and processing of their own organic products.

**Mr. Jonjon SARMIENTO**, Sustainable Agriculture Program Manager, or National Movement of Farmers Organizations or PAKISAMA (Pambansang Kilusan ng mga Samahang Magsaska) and representing Asian Farmers' Association for Sustainable Rural Development (AFA).

The major concern of the PAKISAMA is "How can we bring farmers out of poverty?" PAKISAMA envisions resilient, prosperous farming families in the Philippines.



The following issues were raised: (1) weak agrarian reform program, (2) many poor farmers, and (3) malnutrition among farmers' children. The strategy calls for nation-building to a progressive, integrated and diversified organic farming system. The approach will include a comprehensive farm planning and budgeting, with considerations on the major issue of weak agri-financing and marketing. There should be focus on the following: (1) Family farming to identify the roles of each family member, (2) commodity farming; and (3) bayanihan economy.

The agri-cooperative should provide technology, resources, institutional and market support to the farmers. There should be a holistic approach with the assistance of ATI and academe to do cluster organizing. There are needs for social scientists and agricultural economists in this approach. An identified research gap on the viability of agriculture cooperatives should be studied. It is targeted that for the next 5 years, there will be zero poverty to farmers and their income should be above 10K per month.

There is a current challenge with the advent of climate change; and lowering the carbon footprint. Interventions must be towards rural development; full value chain, rural and urban youth enterprise development; policy change; and young farmer development.

There is a philosophy that learning is a lifelong process.

## **Open Forum**

**Pabs** – I agree, there is policy, institutional and market failure rolled into one. Filipinos are consultants everywhere but we are a failure in agriculture. Solution: know our comparative advantage based on our resources; change our policy on irrigation, esp the uplands following the watershed and river basin approach and water bundling for climate resiliency; retrofitting for flood control; DA commodity approach will not work

My recommendation is to review our laws and how it will lead to food security. Value chain, who understand it? Supply chain is the flow of products from the supplier to the consumer; but who participates, who decides and who benefits? If the farmer is not there, then the process is wrong. Farmers must be the key players in the value chain so that shifting of power will be in favor of the farmer. Horizontal integration thru Sikap Saka is a good approach.

**Gani Serrano, IRR** – there are many problems identified since this morning, part of which were already mentioned by Pabs. But the root is still with the policies. Within the 5 regimes post Marcos, if policies undermine agriculture making them second class, it is really difficult for the young people to like agriculture. A tiger economy is agri-based under the Ramos Administration. This was perpetuation by the succeeding Presidents.

What's for us in agriculture? The PDP of the current administration is poverty and hunger-centered and CHED has a lot to do for reforming education but we have to do something at the foundation level. Even at the elementary level, agriculture must be promoted because if not, very

few really would go to agriculture. The problem is mindset and culture cannot be changed by policies. We need to do something to get students to go to agriculture.

**Daisy** – I'm a farmer, I was born and grew in the farm. Monsanto is moving around, BT corn is all over, multi-national entities are allowed to dominate us. The government is imposing a lot on us especially in OA certification. There is no solid engagement, we are divided people, we have a tunnel vision, working on a belief that what's good for me is good for everyone. Our farmers are the modern day slaves and nobody is inspired in this sociological climate. How can we achieve a happy life, which is grounded on health. Even a rich man cannot buy his health. Organic farming can feed the people, so we go home, live our values in the farm. Engage the farmers since they are not ignorant. We have to be ready to give.

Panel 4. **REGIONAL AND INTERNATIONAL AGENCY PRIORITIES, PROGRAMS, PARTNERSHIPS and PLANS** on Achieving SDGs and Strengthening Higher Education for Sustainable Agriculture (HESA) and Food Systems in Southeast Asia

**MODERATOR: Dr. Nathaniel R. ALIBUYOG**, Vice President for Research and Extension, Mariano Marcos State University

- **Ms. Zacyl Rivera-JALOTJOT**, Program Specialist, Graduate Education and Institutional Development, SEAMEO-SEARCA (Five year Plan for Inclusive and Sustainable Agricultural Development (and next steps)
- **Mr. Roel RAVANERA**, Consultant, for Food and Agriculture Organization of the United Nations (FAO), Philippines Office.

**Ms. Zacyl Rivera-JALOTJOT – SEARCA.** She presented a video about the vision, mission and programs / projects of SEARCA, particularly its scholarship programs. She emphasized on the strategic thrust of SEARCA which is to promote social inclusion thru the ISARD – inclusive sustainable and rural development. She also mentioned the umbrella program on Food and Nutrition Security for SEA (FaNSSEA), and the MS FSCC – program on MS in Food Security and Climate Change – holistic approach to studying food security and CC, compulsory mobility within UC; and track theme.

**Mr. Roel RAVANERA**, Consultant, for Food and Agriculture Organization of the United Nations (FAO), Philippines Office. Professor, Xavier University

He presented a project on bridging science to communities: FAO's regional rice initiative. He stressed that rice is a strategic commodity of Asia. It is confronted with challenges, in particular, the need to produce more to meet rising demand; the reduction in rice yield; increasing competition for labor, etc.

- RRI's strategy: FFS for sustainable intensification of rice production
- Objectives: increase productivity, increase cost efficiency and income of farmers
- Implemented 20 FFS in Mindanao, 3 partners: LGU, School, Farmer

- FFS Learning process: the field is the primary learning resource; experience forms the basis of learning; the curriculum is based on learning needs
- Findings: increased productivity, efficiency and income; enhanced participation and adoption of technology
- Recommendations: adopt FFS approached in bringing science to the farmers' field; Harness resources of local institutions in support of rice farmers, training farmers to become para-technicians; The academe can play an important facilitating role
- Generalization: Quality education can lead to ending poverty, zero hunger, better health

### **Open Forum:**

**Teta**– clarified that SEARCA is not offering MS program but serve as secretariat of the UC. Also when SEARCA started the ISARD, it was done in partnership with the SUCs and the LGUs. On losing the young's interest in agriculture, SEARCA started with 7 pilot projects for establishing school garden project, including developing lesson plan, and lecture modules. The produce from the school garden is used for the school's feeding program. This success story is now being replicated to other schools thru the Adopt a School project.

**Dani, MSU** – on feudalism, the farmers actually get very low net income because of the so many fees that they have to pay. Even with a yield of 200 cav per hectare, his net income will just be Php 8K per season which is still below the poverty threshold. The cause of failure of the agrarian reform is because farmers who receive the land have no resources to operate the farm so they resort to leasing the land and then eventually becomes landless and have to follow the decisions of the landlord.

**Nathan** – what is the sustainability of the FFS?

**Roel** – the problem of our farmers is really complex. But there are now approaches which we can use, like organizing farmers, so they can altogether address their farmers. This can also help sustain the FFS.

**Pabs** –Sustainability is already in the OA Act of 2010. And inclusion of OA in the basic education. Review the law and how it is being implemented.

### **Recapitulation Session by Ted, Wayne and Teta – facilitators of the wrap up**

We may not have touched all issues and concerns, so for the wrap up, let us bring our perspective into global perspective. What are your recommendations for a future workplan for ASEAN towards sustainability sciences, and come up with program and research agenda to be worked out for the next few years. Recommendations will be placed on the SIANI and other websites.

**Dr. Gie** – where do we go from here to put value in the participation of all of us here. Who is going to do what, since each sector can contribute something to help achieve SDG 2 and 4. How do we come up or establish synergies, particularly in knowledge management, policy reviews, etc. ?

Summary of issues and next steps towards HESA

| Issues  | What to Do?  | Agency In-Charge   | Remarks   |
|---|--|--|---|
| Strengthening use of ICT to encourage youth to become interested in agriculture | -Development of a platform (Infomediary) to cover several commodities and empower young people to be extensionists who are very knowledgeable on those crops<br>-Promote the use of the Farmers' Guide Map developed by the DA<br>-Establish a national registry system for farmers and fisherfolks realtime | YPARD to do the mentoring<br><br>DA National Office          | Use IT to shift from chemical farming to OA; cutting our carbon footprints thru OA  |
| Curriculum review from basic education to higher education -                    | -Re-engineer the agriculture curriculum, 3 years schooling, 1 year practicum<br>- Integrate SA in basic and tertiary agriculture courses<br>-Standardize BSA major in OA, SA, Agri-ecotourism Mgt.   | CBSUA<br>UPLB<br>CHED<br>CMU<br>MSU<br>BSU<br>Xavier<br>CLSU | The Association of Colleges of Agriculture in the Philippines has already initiated a curriculum review of the BSA and other new courses in agriculture |
| Limited learning resources in Extension; weak extension approaches              | -Write a book on Extension supportive of the "New Extensionist" and other useful knowledge products like Manual on Food Production<br>-Shift extension approach engaging farmers in the value chain;   | PhilEASNet<br>CMU<br>CBSUA<br>UPLB<br>MSU                    | It is strategic that we have people in the community that can address specific concerns in farming, including marketing                                 |

|  |  |                             |  |
|--|--|-----------------------------|--|
|  | <ul style="list-style-type: none"> <li>-adopt the Farmer-led extension</li> <li>-Strengthen R&amp;D linkage</li> <li>-Promote urban agriculture</li> </ul>   |                             |  |
| <p>Decreasing enrolment in agriculture courses; low passing percentage in licensure exam<br/>Parents don't like their children to pursue agriculture as a career</p>                           | <ul style="list-style-type: none"> <li>-Study the case of CLSU as model in offering agriculture courses;</li> <li>-Develop reviewer for the licensure exam</li> <li>-Open the program for 4- Ps support</li> <li>-Campaign among the parents to inculcate in them the appreciation and love for agriculture</li> <li>-Engage farmers in farm/cross visits to successful farms</li> </ul> | HEIs present in the meeting | <p>Ensure employment of graduates in farms here and abroad<br/>Encourage graduates to go back to the farm to practice their profession</p>   |
| <p>Poor quality of research and project proposals received by CHED</p>   | <ul style="list-style-type: none"> <li>-Capability building for developing and strengthening the research culture in the country</li> <li>- Develop research agenda on SARD</li> </ul>   | CHED, SEARCA, DA, SUCS      | <p>Include in the research agenda market integration and identifying farmers roles in the process, agri-insurance, agricultural bio-diversity and indigenous crops; impact study of SA initiatives in the country; assessment of existing laws in agriculture (AFMA, OA Law, etc),</p> |
| <p>Poor quality of farmers (ageing farmers), young potential farmers seem not to be interested in farming; how do we engage them to a learning climate that would generate the passion for</p> | <ul style="list-style-type: none"> <li>Introduce a new pedagogy for teaching agriculture and conduct a convention on how to teach agriculture in a new point of view</li> <li>-Go back and introduce a change in</li> </ul>  | CMU and other HEA           |  |

|   |   |   |                                  |
|---|---|---|----------------------------------|
| farming/ agriculture  | the school climate to develop the students' passion for agriculture |   |                                  |
| Low investment for OA, and for social transformation towards sustainable agriculture              | Advocacy<br>Review the OA Law and other laws related to agriculture | National Organic Agriculture Board                        | Start with academe members       |
| Consider the power of consumers and how to establish the bond between the producers and consumers | Strengthen Academe – Industry linkage                               | All HEIs  | Nurture kids with wholesome food |
| Lack of seeds   | Establish indigenous seed centers                                   | LGUs in cooperation with the local colleges/ universities |                                  |
| Include in the agenda wild crafted food, native plants  | Develop Agriculture Colleges as Agri-tourism destination            | CBSUA   |                                  |
| DA is continually promoting chemical-based agriculture  | Advocate to DA to shift their priority towards OA                   | Concerned HEIs, NOAB                                      |                                  |

**This report was drafted by:**

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