



Next administration should modernize, industrialize Phl agri

The challenge of addressing poverty, food production and increasing population is a gargantuan task to the incoming administration.

The next President and his team during their short six-year term will also have to contend with the national issues of food insecurity, malnutrition, unemployment, environmental degradation, and climate change.

This is the daunting challenge and scenario discussed by Dr. William D. Dar, in three separate events during the past several weeks, which included the: recent 37th anniversary of the Highland Agriculture and Resources R&D Consortium (HARRDEC), at Benguet State Uni-

versity, in La Trinidad, Benguet, on December 11, 2015; 27th joint symposium of the Visayas Consortium for Agriculture and Resources Program (ViCARP) and the Regional Research Development and Extension Network (RRDEN), on December 3, 2015, in Ormoc City; and at the 26th regional symposium of the Central Luzon Agriculture and Resources R&D Consortium, at PHILMECH, Muñoz, Nueva Ecija, on October 13, 2015.

He said the country's next set of national and local leaders should consider looking at the holistic development framework that InangLupa Movement has been advocating since its inception early this year.

The framework consists of four pillars,

(Pls turn to p2)



Dr. William Dar receives a plaque of appreciation from Dr. Sonwright Maddul, Director of the Highland Agriculture and Resources R&D Consortium and Dr. Carlito Laurean, VP for Research and Extension, Benguet State University, right after he discussed "Towards modernizing and industrializing Philippine agriculture," during the 37th anniversary of HARRDEC, at BSU, La Trinidad, Benguet.

Warmest 5 years

The global average surface temperature in 2015 is likely to be the warmest on record, and will reach a symbolic and significant milestone of 1° Celsius above the pre-industrial era.

This is due to a combination of a strong El Niño and human-induced global warming, according to the World Meteorological Organization (WMO).

The years 2011-2015 have been the warmest five-year period on record, with many extreme weather events—especially heatwaves— influenced by climate change, according to a WMO five-year analysis.

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'Yamang Lupa' farmers attain record harvests

Thousands of farmers in Quezon, Samar and Zamboanga Sibugay stand to profit considerably from the initial results of a soil rejuvenation program of the Department of Agriculture in partnership with the International Crops Research Institute for the Semi-Arid Tropics (ICRISAT), based in India, as crop yields have more than doubled versus traditional farming practices.

In three towns in Samar (Sta. Rita, Ba-

sey and Pinabacdao), where 834 farmers volunteered to join the 'Yamang Lupa' program, average yields of various crops have increased from at least 58% for lowland rice (from 4.5 MT/ha to 8.2 MT/ha) to as much 104% for sweet potato (from 4.2 MT/ha to 13.3 MT/ha).

In Sariaya, Quezon, involving 48 farmer-cooperators, average yield of onion more than doubled, from 11.6

(Pls turn to p2)



InangLupa Movement President Dr. William D. Dar (standing, 2nd from left) is privileged to be a member of the board of judges for the search of the country's Ten Outstanding Young Men (TOYM) for 2015, along with Justice Teresita De Castro (seated, right), who served as chairperson, former Health Secretary Enrique Ona (middle), and musician-composer Ryan Cayabyab (4th from left). The 2015 TOYM is sponsored by the MVP Group of Companies, led by its chairman and CEO Manuel V. Pangilinan (seated, left). Dr. Dar is himself a TOYM awardee for agriculture research in 1988.

Healthy soils: Key to food security

Having healthy soils is key in achieving food security, alleviating poverty and achieving environmental sustainability.

Unfortunately, the country now has more than 11 million hectares with degraded soils, representing 38 per cent of the country's total agricultural lands.

"Thus it is imperative to rejuvenate them as our food security will be compromised in succeeding years," said Director Silvino Tejada of the DA's Bureau of Soils and Water Management (BSWM) at the culminating activity of the International Year of Soils (IYS) celebration, December 7, 2015, at the BSWM convention hall.

"Considering that majority of the 100 million Filipinos depend on agriculture for livelihood, degraded soils will ulti-

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Next Administration... (from page 1)

four sustainable development goals and four major objectives — which collectively serve as sturdy and firm columns — and built on three solid foundations, namely: conducive and holistic legislative agenda; doable plans and programs; and buttressed by enabling strategies.

It is simply called a “4 x 4 x 4” or “four-cube” framework for a modern and industrialized Philippine agriculture, Dar said.

As its pillars, he explained, the new Philippine agriculture should be: inclusive, science-based, resilient and market-oriented towards the pursuit of four major development goals, namely: food sufficiency, economic security, nutritional sufficiency, and environmental security.

Each goal, Dar added, should have its respective plans and programs, which should attain an optimum level of productivity, profitability, competitiveness, and sustainability — for the benefit of all stakeholders, particularly the small farmers, fishers and their families.

Action Points

To achieve a modern and industrialized agriculture sector, Dar said the new administration will have to work hard on structural change that encompasses policy reforms and program activities of concerned departments/bureaus. These would include:

- Harnessing the potential of human capital like addressing skills of farmers and developing relevant educational curriculum and innovative pedagogy for various interest groups;
- Providing support services for the agriculture sector such as access to market, credit and financing;
- Offering best bet options to increase productivity like quality seeds;
- Establishing infrastructure requirements to include mechanization and irrigation facilities; and
- Tackling issues of climate change and environmental degradation including weak research in the light of the changing dynamics of the society, economy and of climate.

The next administration should double or triple the budget for the agriculture sector.

Ideally, the budget for the agriculture sector as a percentage of the national budget should be the same as the sector’s contribution to the country’s gross domestic product or GDP. In 2014, the country’s GDP amounted to P7.16 trillion, with agriculture contributing P712.5 billion.

Ironically, total agriculture expenditures in 2014 was only P112 B, according to the Philippine Statistics Authority. In 2015, the budget of the Department of Agriculture was P85 billion.

The incoming administration, Dar said, should allot at least P200 billion up to P300 billion to start modernizing and industrializing Philippine agriculture.



11th National Corn Congress. Agriculture Secretary Proceso J. Alcala (2nd from right) and former agriculture secretary and InangLupa Movement President William D. Dar (left) lead the ceremonial ribbon-cutting to open the 11th National Corn Congress, on October 22, 2015, in Clark, Angeles, Pampanga. Joining them are PhilMaize President Roger Navarro (2nd from left), DA assistant secretary Edilberto de Luna (3rd from left) and Rhaegee Tamana. Secretary Alcala said the country has already achieved 100% self-sufficiency in corn, and the focus now and in the years to come is how to be globally-competitive, and ensure increased productivity to support the swine and poultry industries, as yellow corn serves as main animal feed ingredient.

‘Yamang Lupa’... (from page 1)

MT/ha to 25 MT/ha, for a 115.5% increase.

In RT Lim, Zamboanga Sibugay, with 31 farmer-cooperators, harvest of peanut likewise doubled, from the farmers’ practice of 3.3 MT/ha to 6.75 MT/ha harvest derived from *Yamang Lupa* techno-demo farms.

“We are pleased to report these encouraging results from the three *Yamang Lupa* initial techno-demo sites, where we are piloting soil rejuvenation and farm management technologies developed and successfully implemented by ICRISAT in Boochetana, Kartanaka, India,” said Samuel Contreras, soil conservation and management chief of the DA’s Bureau of Soils and Water Management (DA-BSWM), and concurrent *Yamang Lupa* program management group leader.

“It is heartening to hear such favorable developments, as we are right all along that the country’s farm soils have to be rejuvenated, and that farmers adopt modern, yet sustainable ‘*Bhoochetana*’ soil and water management technologies,” said Dr. William Dar, former director-general of ICRISAT, and currently president of InangLupa Movement, an agriculture-based NGO he organized after serving ICRISAT for an unprecedented 15 years.

The new government should nurture the hand that feeds the nation, so farmers and fishers could continue doing so, lest we all starve, Dar concluded. ###

“We thank Agriculture Secretary Alcala for partnering with ICRISAT to showcase and pilot Boochetana technology in the Philippines. We hope the DA will expand it nationwide,” said Dar.

Yamang Lupa program is jointly implemented by ICRISAT, InangLupa and DA through the BSWM, Bureau of Agricultural Research (BAR), and Regional Field Units (4-A, 8 and 9).

Contreras said the program, now on its second year of implementation, has a combined target area of 16,600 hectares (ha), with the bulk in Sariaya, Quezon at 10,000 ha, followed by Samar (5,900 ha), and Zamboanga Sibugay (704 ha).

He said for each project site, soil samples are analyzed to determine soil health and nutrients. “This will enable us to recommended the right kind and amount of fertilizers to be applied for each specific crop. We then introduce improved crop varieties. Teach farmers balanced fertilization, combining inorganic and organic fertilizers, and integrated pest management, among other soil and water management practices.”

Further, they train *Yamang-Lupa* farmer-cooperators to adopt and practice appropriate soil and farm management technologies like rice straw mulching, seed inoculation with *Bio-N*, intercropping, application of needed micronutrient fertilizers, use of *trichogramma* and other IPM methods, crop rotation, proper crop density, incorporating fresh and carbonized rice hull, rice straw, compost and other organic materials into the soil, controlled irrigation and observation well for efficient water management, use of mechanized equipment like drum seeder. (by Noel O. Reyes)

In San Francisco, Agusan del Sur, the soil is drying up. Farmers like William Abatayo and his wife, who rely on corn and rice harvest, have turned to alternative livelihoods like weaving coconut coir into 'geo textiles' to feed their family.

"Walang tubig dahil sa El Niño. Namamatay ang palay namin dito," Abatayo said.

But the plight of farmers is about to get worse as climate change increases the frequency and severity of drought across regions.

PAGASA, the Philippines' state weather agency, said that *El Niño* may intensify from moderate to strong in the last quarter of 2015 to first quarter of 2016.

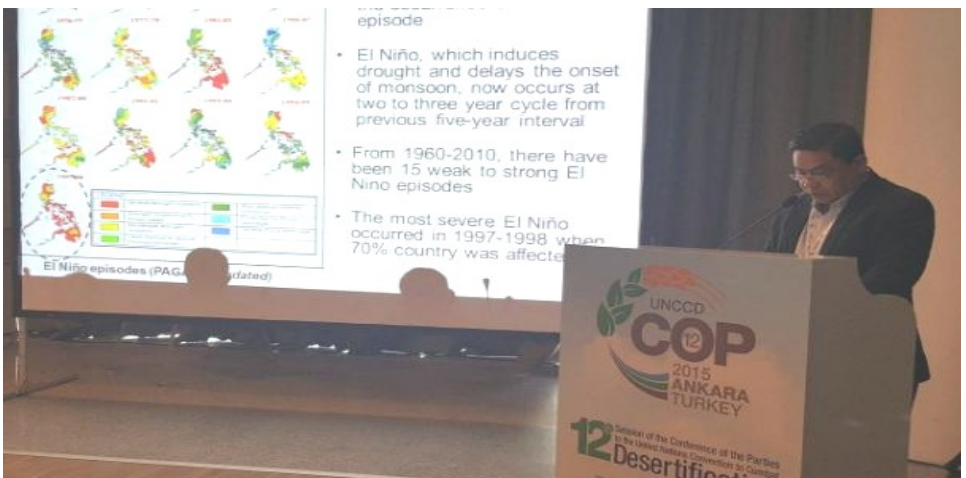
El Niño, which induces drought and delays the onset of monsoon, now occurs in a two- to three-year cycle from its previous five-year interval. From 1960 to 2010, there have been 15 weak to strong *El Niño* episodes.

Over a hundred thousand hectares of land in the Philippines were affected from September 2014 to August 2015 by prolonged dry spells resulting to a production loss of 281,860 million tons.

"This is a serious issue we have to deal with now. It affects our livelihood, health, food production, electricity, and

Phl gov't body formed vs. drought, climate change

By Hon Sophia Balod



BSWM Dir. Tejada presents a paper at the United Nations Convention to Combat Desertification (UNCCD) in Ankara, Turkey.

water supply," Tejada added.

Drought: A global crisis

During the United Nations Convention to Combat Desertification (UNCCD) in Ankara, Turkey, world leaders, particular-

ly countries belonging to arid, semi-arid and sub-humid areas, push for national action plans across to borders to mitigate the effects of dry spells.

"Crisis management on drought should focus on early mapping system, detection of vulnerable areas and land and water management," UNCCD secretariat Louise Baker said.

According to UNCCD, more than 11 million people have died and over two billion people have been affected because of drought.

Drought ranks first among all natural hazards based on frequency, severity, special extent, life and economic loss.

Drought management policies

In the Philippines, two laws have been passed to mitigate the effects of drought: the Climate Change Act of 2009 where increasing severity and frequency of droughts are recognized; and the Philippine Disaster Risk Reduction Act of 2010.

But a more concrete policy action should be passed to address drought and the effects of desertification.

Dr. Silvino Tejada of the Bureau of Soils and Water Management plans to form a subcommittee focusing on drought crisis mitigation under the Committee on the Conservation and Management of Resources for Development (CCMRD).

"We focused on land degradation during the last Conference of the Parties. This year, the Department of Agriculture will focus on irrigation, water resource management," Tejada said.

The DA, however, acknowledges that there might be challenges to uphold a comprehensive policy framework on drought.

"There is a need to for strong political commitment from high-level authorities and institutions. We also need a funding support for the full formulation of the national drought management policies," Tejada said. ####

BSWM sets up SCoPSA demo farm in Albay

By Noel O. Reyes

Pioduran, Albay – The DA's Bureau of Soils and Water Management (DA-BSWM) has established a three-hectare techno-demo farm of corn planted on sloping areas, in this coastal town, where six out of 10 are women-farmers.

"This is the 12th techno-demo farm on sustainable corn production on hilly areas or SCoPSA that we have set up this year," said BSWM assistant director Sonia Salguero, during the technical briefing and orientation of about 100 farmers, mostly women, at the municipal covered court, in Barangay Caratagan, in this town, on October 28, 2015.

"We are happy that two farmers have donated portions of their farm to be developed into our SCoPSA techno-deme farm," said Salguero, adding that the BSWM technical men have identified 150 hectares of sloping areas could be planted sustainably and profitably to corn.

Pioduran Mayor Henry Callope thanked Salguero, who represented both BSWM Dir. Silvino Tejada and DA Secretary Proceso Alcala during the SCoPSA technical briefing and orientation.

"Mainam na proyekto itong dinala ninyo rito sa Pioduran. Kami ay lubos na nagpapasalamat kay Secretary Alcala, Director Tejada, Assistant Director Salguero at sa buong DA-BSWM sa kaalamang ibabahagi ninyo sa aming mga

magsasaka upang lumaki ang kanilang kita at guminhawa ang kanilang kabuhasan," said Mayor Callope.

BSWM assistant director Salguero said SCoPSA promotes sustainable land use management aimed at enhancing agricultural production and livelihood, and at the same time restoring ecological balance.

It prevents erosion and landslide. Likened to 'corn terraces,' the SCoPSA combines SALT (sloping land agriculture technology) and contouring beautifully, she added.

The DA-BSWM started establishing SCoPSA techno-demo farms in Region 2 (Cagayan Valley) being the country's leading corn producer, Salguero said. "We showcased the technology to farmers and local government officials, for them to see and experience that there is a sustainable and profitable way of planting corn on sloping areas," she noted.

In fact, "some of our techno-demo farms were able to produce up 16 tons per hectare of hybrid corn," said Jose Manguerra, BSWM supervising agriculturist, who hails from Pioduran. He served as one of the technical resource speakers during the orientation.

The other speakers were: Joseph Rojas, BSWM senior agriculturist, who discussed soil conservation technologies;

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Organic agriculture cannot feed the world's hunger in blast but it could help the world to lessen the hunger.

Mr. William Dar
President, Inang Lupa

At the Global Youth Forum, Dr. William Dar said organic agriculture has to be promoted because it has its own niche, but it cannot feed the whole country. Our soils are sick, hence the need to add more organic matter. Balanced fertilization is a must — which is the use of both organic and inorganic fertilizers.

BSWM needs P1.5B for small irrigation projects in 2016

The DA's Bureau of Soils and Water Management (DA-BSWM) needs P1.5 billion to roll out small-scale irrigation projects to mitigate the adverse effects of El Niño in 2016.

"We have already submitted to the DBM our **seven-year master plan**. That will serve as the basis for the DBM to release funds for small irrigation projects to the Department of Agriculture [DA]," DA-BSWM Director Silvino Q. Tejada said, adding that they have identified areas where to construct small water-impounding systems and small diversion dams.

"This is the immediate response of the DA to address water scarcity in farm irrigation, due to prolonged drought caused by El Niño," he added.

Tejada said will cloud-seeding operations in areas affected by drought in

2016, in cooperation with the Philippine Air Force and the Civil Aviation Authority of the Philippines.

In 2015, the BSWM received P1.2 billion for small-scale irrigation projects, he said.

Meanwhile, Tejada said the BSWM is helping the National Irrigation Administration (NIA) in crafting a 10-year master plan to wipe out the 2.4-million-hectare backlog in the country's irrigated areas.

"We are coordinating with the NIA, particularly in the selection of sites. As per the Agriculture and Fisheries Modernization Act (AFMA), we have a very clear delegation. For big projects with elevated structures of 18 meters and above, that's for NIA. Those that are 18 meters and below are for BSWM," he said. *(by Mary Grace Padin, Business Mirror)*

Gov't to implement water-saving technologies

The National Convergence Initiative for Sustainable Rural Development (NCI-SRD) recently conducted a workshop to develop an action plan to implement water harvesting facility projects, adopting a 'cistern technology system,' which is commonly used in areas where water is scarce.

In the workshop, NCI-SRD national focal person Dir. Silvino Tejada of BSWM explained how climate change and rapid population growth have greatly contributed to limiting access to clean and potable water to drink. He said the coun-

try's water resources are being consumed excessively and contaminated at a fast pace due to improper management.

He said concerned government agencies are aware of the situation and have been undertaking needed interventions, particularly to combat the impacts of El Niño and water shortage, along with initiatives to develop and implement modern water saving and harvesting technology in different identified convergence sites.

"We hope the adoption of a cistern

technology system will help manage our limited and decreasing water resources. Tejada said.

He said a study conducted by the World Resources Institute (WRI) showed that the Philippines will experience a "high" degree of water shortage in the year 2040, and agriculture will be greatly affected.

The DA-BSWM continues to establish water harvesting facility projects, small farm reservoirs and impounding systems, Tejada noted. *(by Loraine D. Cerillo, DA-BSWM)*

BSWM sets up SCoPSA demo farm in Albay (from page 3)

and Filipina Ventigan, BSWM agriculturist II, who talked on record keeping and farm recording.

Salguero said the BSWM started es-

tablishing SCoPSA techno-demo farms in Iligan, Isabela, and has since then moved on to set up four more sites in Quirino and Cagayan, three in Iloilo, one

each in Pangasinan and Davao del Norte, for a total of 11 sites. Next year, the DA-BSWM will put up 12 more, she concluded. ###



More than 100 farmers, mostly women, attended a technical briefing and orientation on sustainable corn production on sloping areas (SCoPSA), in Pioduran, Albay, where the DA-BSWM established a three-hectare techno-demo farm.

Phil organic agri ranks 4th in Asia

The Department of Agriculture National Organic Agriculture Program (NOAP) said the Philippines now ranks fourth among the leading Asian countries in terms of land devoted to organic agriculture.

"From the initial baseline data of 14,140 hectares in 2006, the NOAP was able to devote an estimated area of 101,278 hectares to organic farming system, according to the IFOAM 2015 report. With this development, the Philippines now rank as the 4th leading organic country in Asia," said DA Undersecretary for Special Concerns Bernadette Romulo-Puyat, in a message delivered on her behalf by Elsa Parot of the NOAP at the opening ceremonies of organic agriculture month celebration.

The celebration of Organic Agriculture Month, with the theme — "Halin Talamnan Tubtob Kalan-an" or farm-to-table — culminated at the 12th National Organic Agriculture Congress (NOAC) in Bacolod City, on November 25-27, 2015. This year's celebration focused on the importance of understanding the organic agriculture supply chain and helping organic farmers build linkages with consumers.

"Since the inception of NOAP in 2012, the DA has been actively promoting the adaption of organic farming in the country," said Romulo-Puyat, adding that "it is undeniable that more farmers are now shifting to organic farming and more consumers now prefer organic products."

President Benigno Aquino III has declared the month of November of every year as "Organic Agriculture Month," through Presidential Proclamation No. 1030, enjoining everyone to provide national focus on the importance of organic agriculture.



Former agriculture secretaries William Dar (right) and Leonardo Montemayor served as guests of former Senator Joey Lina, during his weekly radio program "Sagot ko Yan!," aired every Sunday, 8-9 am, at DZMM 630 AM station. Dr. Dar discussed the advocacies of InangLupa Movement, particularly the "4x4x4 or four-cube" development framework, which may serve as a strategy or platform for "presidentiables" and "senatoriables" in the coming May 2016 national elections to modernizing and industrializing Philippine agriculture.

In support of the Presidential proclamation, all DA regional offices have conducted year-round activities to promote organic agriculture such as trade fairs, regional congresses, and a series of school-on-the air programs on organic farming.

Likewise, the Department of Education spearheaded a national poster making and essay writing contest to highlight the importance of organic agriculture.

The DA-NOAP also honored this year's top organic agriculture performers through the 'National Organic Agriculture Achievers' Awards.'

Agriculture Secretary Proceso J. Alcala, authored the Organic Act of 2010, a law which promotes the development and promotion of Organic Agriculture in the Philippines. The law intends to promote, propagate, develop, and implement the practice of organic agriculture in the country to improve soil fertility, increase farm productivity, reduce pollution, protect the health of the farmers, consumers, and the general public, as well as save on imported farm inputs.

(by Ian Go, DA-OSEC)



Dr. William Dar receives a plaque from Dr. Ernie Brown, President of Philippine Agricultural Economics Development Association (PAEDA), during its 50th Biennial Convention in Legazpi City, after he discussed a topic, "Is Philippine agriculture ready for the ASEAN Economic Community?" The convention was keynoted by former NEDA Secretary Dr. Cielito F. Habito, who honored by PAEDA as its "Most Outstanding Member for 2013-2015." Over 250 guests and participants attended the two-day event, composed mainly of students and experts from various fields such as agricultural economics, and rural development as well as technical fields in agriculture, fisheries, forestry and natural resources. Present also were representatives from the national offices of government organizations, national and international R&D institutions, and the city government of Legazpi City. A total of 138 technical papers were presented during the event, and the best papers in four thematic areas and best undergraduate thesis were recognized by PAEDA.



Ilocos Sur oct 30 | Dr. William Dar was guest of honor of his 'alma mater,' Ilocos Sur Polytechnic State College (ISPSC), during the blessing and inauguration of the "Dr. William D. Dar Knowledge Center," at its campus in Sta Maria, on October 30, 2015. Created by Republic Act 8547 10 years ago, ISPSC is the youngest state college in the region and was primarily established and chartered to serve the interests of its service area, especially the students craving for tertiary education who for reasons of poverty cannot afford expensive education. In his message during the inauguration, Dr. Dar said "through the effective and dynamic leadership of its president, Dr. Rafael Querubin, the College has metamorphosed into what it is today, a responsive institution ready to dedicate itself in the field of education primarily to uplift the lives of the Filipino people, especially the poor and marginalized sector of our society." He encourages all alumni of ISPSC to donate books and paid up journals to the new ISPSC Knowledge Center.

Warmest 5 years (from page 1)

"The state of the global climate in 2015 will make history as for a number of reasons," said WMO Secretary-General Michel Jarraud.

"Levels of greenhouse gases in the atmosphere have reached new highs, and in the Northern hemisphere spring 2015 the three-month global average concentration of CO₂ crossed the 400 parts per million barrier for the first time," Jarraud said.

Further, "2015 is likely to be the

(Pls turn to p6)

BSWM,BAFS and NOAP conduct organic agri seminar

In celebration of the 1st Organic Agriculture Month, the DA's Bureau of Soils and Water Management (BSWM) conducted a joint "Seminar on Quality Standards, Certification and Registration of Organic Soil Amendments," with the Bureau of Agriculture and Fisheries Standards (BAFS) and the National Organic Agriculture Program (NOAP).

The seminar aimed to strengthen the institutional capacity of LGUs, farmers' organizations, State Universities and Colleges and NGOs to produce quality-standard organic fertilizers, and help them become commercial fertilizer producers, and to familiarize them on the mandatory organic products certification. Organic producers must have their materials, processes and products certified, as required under the Philippine National Standards (PNS), before they could label and sell their products as "Organic" or "Organically-Produced." The seminar also urged farmers to reduce the use of chemical fertilizers, promote environmental protection, and produce quality and safe farm products for the benefits of consumers.

The DA's NOAP aims to further increase the country's organic agriculture area to about 483,500 hectares. This target will be attained through massive information campaign and broadening of the standards and certification process to encourage more farmers to shift into organic agriculture by providing them appropriate incentives, Tejada said.

He noted that there is a strong need

Healthy Soils... (from page 1)

mately lead to more poverty, as unproductive soils will result to food insecurity and environmental sustainability," Tejada said.

During the event, Tejada also led the launch of the 2015-2025 Philippine National Action Plan to combat Desertification, Land Degradation and Drought (NAP-DLDD), which is a working document that discusses the interrelated environmental concerns in the country. It lists specific areas that have degraded soils, which need rejuvenation.

The DA-BSWM served as the secretariat and lead implementing agency in the Philippines of the IYS celebration.

The 68th UN General Assembly has declared 2015 as the International Year of Soils (IYS), with the Food and Agriculture Organization of the United Nations tasked to implement appropriate activities in partnership with UN-FAO member-countries, including the Philippines, to promote and increase awareness and understanding of the importance of soil for food security and essential ecosystem functions. *(With reports by Ian Go, DA-OSEC)*



Dr. William Dar (right) signs a tripartite Memorandum of Understanding among the DA's Bureau of Agricultural Research (BAR), Iowa State University (ISU) and InangLupa Movement, Inc., in the areas of seed systems and seed policy, ICT for agriculture, agriculture online open courses, and capacity building. Joining him are Dr. Guntuku Dilepkumar, global program leader, of ISU Seed Science Center, and BAR Director Nicomedes Eleazar. Among those who witnessed the signing are DA-BAR officials Joell Hizon Lales and Tony Obligado, and InangLupa officers Cheryl Marie Natividad-Caballero and Rosana Mula.

for the country to establish a cost-efficient, competitive and sustainable agricultural production system that is in harmony with nature and mother Earth, which has been greatly impacted though

the years by the adverse effects of climate change and other natural occurrences, and improper and destructive practices of man. *(by Loraine D. Cerillo DA-BSWM)*

Warmest 5 years (from page 5)

hottest year on record, with ocean surface temperatures at the highest level since measurements began. It is probable that the 1°C Celsius threshold will be crossed," he added. "This is all bad news for the planet."

The good news is that greenhouse gas emissions, which are causing climate change, can be controlled, the WMO chief said.

"We have the knowledge and the tools to act. We have a choice. Future generations will not," he noted.

"Added to that, we are witnessing a powerful El Niño event, which is still gaining in strength. This is influencing weather patterns in many parts of the world. The overall warming impact of El Niño is expected to continue into 2016," he said.

WMO issued its provisional statement on the status of the climate in 2015, and an additional five-year analysis for 2011-2015, to inform negotiations at the U.N. Climate Change Conference in Paris.

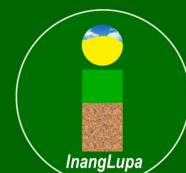
A preliminary estimate based on data from January to October shows that the global average surface temperature for 2015 so far was around 0.73 °C, above the 1961-1990 average of 14.0°C and approximately 1°C above the pre-industrial 1880-1899 period.

This temperature tendency indicates that 2015 will very likely be the warmest year on record. The global average sea-surface temperature, which set a record last year, is likely to equal or surpass that record in 2015. The global average temperatures over land areas only from January to October suggest that 2015 is also set to be one of the warmest years on record over land.

South America is having its hottest year on record, as is Asia (similar to 2007), and Africa and Europe their second hottest.

According to preliminary figures as of the end of September 2015, 2011-15 was the world's warmest five-year period on record, at about 0.57°C (1.01°F) above the average for the standard 1961-90 reference period. It was the warmest five-year period on record for Asia, Europe, South America and Oceania, and for North America. WMO compiled the five-year analysis because it provides a longer-term climate signal than the annual report. ###

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E-mail: inanglupa@yahoo.com;
w.dar38@yahoo.com

Facebook: <https://www.facebook.com/inanglupa>

Tel No: +63 (02) 232 2129;
+63 906 4104 023;
+63 917 6512 711

Office: InangLupa Movement, Inc. Office
Address: DA-BSWM Building, Diliman,
Quezon City, Philippines