



Research and Development **BAR DIGEST**

Official quarterly publication of the Bureau of Agricultural Research

Volume 14 Issue No. 3

Visit us at: <http://www.bar.gov.ph>

July-September 2012

Supporting Agriculture and Fisheries R&D thru

Agritourism



CONTENTS

July–September 2012

BAR R&D DIGEST



- 3** R&D Notes: Realizing the Promise of Agritourism
- 5** Agriculture and Tourism: The Perfect Tandem
- 8** Providing the Subanen Experience with the Taste of Adlai and its Products
- 11** Bohol is not Just Chocolate Hills
- 13** There's More to Banaue Rice Terraces: The Export Heirloom Rice Tinawon
- 16** Bangkong Kahoy Valley: One of Quezon's Undiscovered Paradise

- 19** Batanes: Abode of the Aruis Berries
- 21** Sustaining the Marine Resources through Adopting a Park
- 23** Bicol: A Haven for the Queen
- 26** Benguet: An Exquisite Haven of Strawberries and More
- 28** Mundo Hill: Up close and Personal
- 30** Ilocos'Treasured Bulbs Commercialized





“ Agritourism brings this to patrons. It is a venue where people can appreciate a natural attraction and at the same time, discover that there is more to a single crop than meets the eye. ”

by DR. NICOMEDES P. ELEAZAR, *CESO IV*

weather conducive for travel, families enjoy the landscape uncommon to the urban areas, and taste fresh fruits and vegetables that are not nearly as fresh as those in city groceries.

The Agritourism Drive

A combination of agriculture and tourism, the coined term Agritourism raises awareness in both agriculture and tourism activities. Agritourism becomes the venue where research and development (R&D) efforts in agriculture and fisheries are shared with the public, making new developments known and promoting new agri-fishery products. Furthermore, Agritourism presents farmers with opportunities for additional income, enables employment for the rest of the community, and provides revenue for their respective local government.

In the Philippines,

government leaders have continued to pursue the improvement of the Agritourism sector. House Bills 1808 and 493, Senate Bill 367, and Republic Act No. 9593 aim to promote Agritourism in the country and encourage participation for the development and preservation of rural areas. Since the ratification of RA 9593, also known as the Tourism Act of 2009, numerous agritourist spots have emerged throughout the country, encouraging more patrons and popularizing agritourism as come-on to those seeking an all-natural unique experience.

BAR on Agritourism

The Department of Agriculture – Bureau of Agricultural Research (DA-BAR) supports agritourism initiatives throughout the country. Agritourist spots around the Philippines, such as those in this issue of the BAR R&D Digest, became the venue for BAR R&D projects that aimed at ensuring

A new term to an age-old custom, Agritourism, also known as “farm tourism,” is a “form of tourism activity conducted in a rural farm area which may include tending to farm animals, planting, harvesting and processing of farm products. It covers attractions, activities, services and amenities as well as other resources of the area to promote an appreciation of the local culture, heritage and traditions through personal contact with local people.”

Although the term Agritourism may seem to be a new concept, it has been an old practice for Filipinos. City dwelling families visit farming relatives during the hot summer season to cool down in the nearby lake. As schools are out during the summer and with the

food security and sustainability.

Among its many collaboration with the Southeast Asian Region Center for Graduate Study and Research in Agriculture (SEARCA) was the conduct of the "First National Agritourism Research Conference" held in June 2012. With the aim to bring together key players in the burgeoning industry of Agritourism, the conference served as a benchmarking of agritourist spots around the country.

BAR also promotes Agritourism as shown and featured in its various publications. Part of the success of Agritourism is advocating for it.

Most yearn to see the union of traditional, back-to-basic processes with advanced technology resulting from R&D efforts. Agritourism brings this to patrons. It is a venue where people can appreciate a natural attraction and at the same time, discover that there is more to a single crop than meets the eye.

Agritourism shows off the outcome of collaborations among DA and its staff agencies, regional field units, state universities and colleges, and the private sector. It is a product of years of R&D initiatives and breathtakingly fascinating sceneries that can only be found in our very own Philippines. ###



EDITORIAL BOARD

Rita T. dela Cruz
Editor

Anthony C. Constantino
Zuellen B. Reynoso
Layout/Design

Julia A. Lapitan
Consulting Editor

Anne Camille B. Brion
Rita T. dela Cruz
Diana Rose A. de Leon
Patrick Raymund A. Lesaca
Leila Denisse E. Padilla
Zuellen B. Reynoso
Writers

Anthony A. Constantino
Print Manager

Julia A. Lapitan
OIC-Head, ACD

Dr. Nicomedes P. Eleazar, CESO IV
Adviser

Photo credits: All photos and graphics by BAR.

BAR R&D Digest is published quarterly by the Applied Communication Division of the Department of Agriculture-Bureau of Agricultural Research (DA-BAR) located at RDMIC Building, Visayas Avenue, Diliman, Quezon City, Philippines. This publication contains articles on the latest technologies, research results, updates, and breakthroughs in agriculture and fisheries R&D based from the studies and researches conducted by the National Research & Development System for Agriculture and Fisheries (NaRDSAFA).

For subscription and inquiries, please contact

Applied Communication Division - Publication Section
BUREAU OF AGRICULTURAL RESEARCH
Department of Agriculture
3/F RDMIC Bldg., Visayas Avenue
cor. Elliptical Rd., Diliman, Quezon City
PHILIPPINES 1104
Trunklines: 928-8505, 927-0226, 928-8624
Local Nos: 3011, 3012, 3027
Fax: 920-0227, 927-5691
Email: acd@bar.gov.ph

Articles are also available online.
Visit our website at <http://www.bar.gov.ph>
Articles may be reprinted with permission from the management.



TOURISM

AGRICULTURE

The Perfect Tandem

| by PATRICK RAYMUND A. LESACA

Agritourism has different definitions in different parts of the world—it overlaps with geotourism, ecotourism, enotourism (wine tourism) and culinary tourism. Over the years, Agritourism has formed a niche that is considered a promising industry in many parts of the world.

Agritourism involves any agriculture-based operation or activity that brings visitors to a farm or ranch for their outdoor recreation activities and education. It can include a wide variety of activities, including buying produce direct from a farm stand, navigating a corn maze, picking fruits, or

feeding animals. It has provided additional opportunities for farmers, farm owners, and producers to generate additional income. It has also helped increase employment opportunities in the community as well as the revenue of their local government.

The Philippines' topography is very ideal for Agritourism. Agritourism farms, such as those in Benguet, Bohol, Bicol and Guimaras, are scattered throughout the country. Leisure farms or farm resorts, as they are called by the Department of Tourism (DOT), have sprung up in different regions of the country. These are farms with resort, accommodation, and dining

facilities.

Agritourism activities help offset the expenses of venturing into Agritourism and provides technical assistance to farmers who wish to enter the business.

“*It has provided additional opportunities for farmers, farm owners, and producers to generate additional income.*”



First National Agritourism Research Conference

On 27 June 2012, the University of the Philippines - Asian Institute of Tourism (UP-AIT) and the Southeast Asian Regional Center for Graduate Study and Research in Agriculture (SEARCA) conducted the “First National Agri-tourism Research Conference in the Philippines” at the SEARCA Headquarters in Los Baños, Laguna.

Participants were requested to submit their research work on the topic, including but not limited to the following: 1) Theory and Practice in the Philippines Agritourism Sector, 2) Financing Agritourism Initiatives/Marketing and Business Development, 3) Partnerships and Collaborations in Agritourism Ventures, 4) Cultural and Historical Aspects of Agritourism, and 5) Policy and Regulatory Concerns of Agritourism/Certification/ Sustainability Challenges.

Experts during the conference agreed that Agritourism in the Philippines has a long way to go before becoming an economic driver of rural communities—facing challenges in administration, policy, regulation, and product development. But they likewise accorded that steps such as the conflation of research on the subject can significantly contribute to the development of the field. The Department of Agriculture (DA) believes that amid the dwindling contribution of agriculture to the GDP, that is, from 30–40 percent half a century ago to today’s 15–18 percent, Agritourism can work in the Philippines because farming is an integral part of Filipino culture.

1st International Agriculture and Tourism Expo

During the “First International Agriculture and Tourism Expo” held on June 20–July 2, 2012 at the World Trade Center in Pasay City, a wide

array of Agritourism programs of government agencies, local government units, and private companies were exhibited. The expo, whose theme is “Improving Economy through Agriculture and Tourism”, was supported by the DA, DOT and the Technical Education and Skills Development Authority (TESDA). The three agencies also pledged support for joint undertakings and other efforts to promote Agritourism in the country.

Currently, the country is sustaining 32 eco-tourism sites, including 27 protected areas that include the Tubbataha Reef, a national marine park in Palawan.

Collaboration for Agritourism

The industry is facing the question of who should lead today’s private sector-driven agritourism. While the DOT and DA signed a joint memorandum of agreement for the promotion

“*Currently, the country is sustaining 32 eco-tourism sites, including 27 protected areas that include the Tubbataha Reef, a national marine park in Palawan.*”

and development of agritourism in 2002, the agriculture and tourism sectors have remained to be mutually exclusive. UP-AIT said that an inventory of operating farms and a more aggressive program for agritourism are yet to be produced by the partnership of the two lead national agencies, DOT and DA.

Agritourism has been marked as an identified product by the DOT. It has been integrated into its accreditation program with a set of guidelines on what can be considered as an agritourism site.

On the other hand, the DA still has no special program to support agritourism since its focus is largely on food security. But the DA's current project lineup stands to benefit tourism. The DA budget has been allocated for marketing, production, and public infrastructure projects that include improved accessibility to agritourism farms.

Supporters of agritourism remarked that the linkage of the two national agencies, together with the local government units, would have to be strengthened to boost agritourism in the country.

The Role of SUCs

State universities and colleges (SUCs) in the Philippines have long realized the potential of agritourism as a means to promote agriculture technologies and innovations as well as agribusiness opportunities.

The College of Agriculture (CA) at the University of the Philippines Los Banos (UPLB), for one, has launched the CA Agritourism Program to integrate and coordinate agritourism-related resources and activities of the College of Agriculture with other units of UPLB and other service providers to contribute in promoting technology commercialization, enterprise development, and entrepreneurship in Philippine agriculture.

Being near the country's summer capital and a gateway to the Cordilleras, Benguet State University (BSU) saw the opportunity to venture in agritourism. BSU showcases the following: Benguet as the Salad Bowl of the Philippines, the strawberry fields of La Trinidad, the thriving cutflower industry in the region and the pioneer Arabica coffee project under the pine trees. BSU is now challenged to develop a culture-based agritourism program to introduce the Cordilleras' rich culture to its visitors from the lowlands.

Agritourism activities may include the following: agricamp, agrifair, techno demo, farm tour, farm market, farm vacations, on-farm bed and breakfast, wineries, hiking trails, plant ID, fishing, hunting, pick and cook, agri-challenge, petting zoo, and bird watching. These activities provide visitors an experience that stimulates economic activity and impacts both farm and community.

For some SUCs, the need to diversify the value of agriculture through exposure in agri-tourism activities may also help enhance awareness and arouse interest among the youth to once again shift their attention to agriculture.

Opportunities

The increased popularity of agritourism sites around the Philippines affirms earlier concepts that farmlands are also for tourists. As a predominantly agricultural country, it is crucial that tourism packages showcase the bounty harvests that grow on our rich soil; thus, exhibiting not only our abundant natural resources but also unveiling the rich cultural heritage of our people.

Agritourism will not only provide additional employment opportunities in agricultural communities but will also open additional market for local products and services. It will also facilitate transfer of income from urban to rural communities and hopefully enhance appreciation about agriculture among the people from urban areas especially the youth. ###

References:

1. *Powerpoint Presentation of V. T. Villancio, F. Tanudtanud, and V. Limsan Jr entitled "Assessing the Potential of the CA Agritourism Program as a Modality for the Promotion of Agricultural Technologies for Commercialization and Enterprise Development"*
2. *Powerpoint Presentation of Dr. Colting entitled "Benguet State University: Its Contribution in the Promotion of Agritourism in the Philippines."*

Providing the Subanen experience with the Taste of Adlai and its Products

| by LEILA DENISSE E. PADILLA



The Subanen people, one of the early stewards of Zamboanga del Sur, are well acquainted to the province's heap of diverse resources—from its rich marines and freshwaters up to its vast agricultural uplands and lowlands. Given its natural treasures, the province attracted various tribes from neighboring locales and thus became a melting pot of cultural traditions.

Today, Zamboanga del Sur is one of the premier tourist destinations in Mindanao that is frequently visited because of its natural sceneries such as the Lapuyan Falls, Sominot Cave, Dao-Dao Islands, Pulacan Falls, Mt. Susong Dalaga, and Manga Falls.

While these spots have become a key for rising investments, the vibrant cultural festivals are among the famous attractions that invite and allow tourists and investors to appreciate the early times of Zamboanga del Sur. Among these festivals are the Megayon Festival, Mandala Festival, and Pakano Festival that serve as tribute to the Subanens.

Known as “people of the river”, the Subanen people used to thrive alongside riverbanks and there they nurture the environment, both aquatic and agricultural resources. But as time went by, they moved up in the highlands, particularly in the

town of Midsalip, where they have long been cultivating adlai, a pearl-like grain that has been recently discovered and found as a potential staple crop.

Growing Adlai in Midsalip

Characterized with sloping terrain and dry soil due to lack of irrigation, Midsalip is suitable for growing adlai rather than rice and corn which are grown in the lowlands of Zamboanga del Sur.

The Subanens gave the town's name which originated from *migsalip* meaning “to gather and collect” as a description of their simple ways

of cultivation and generation of livelihood from their harvest. Majority of us have not yet seen nor heard about adlai but the Subanens have known it all their lives, just like how most of us know and love rice.

The Subanen ancestors have been growing adlai as their staple food because this grain crop is very adaptable to the constricted farming conditions in Midsalip; with low water inflow, soil pH level, and temperature. What is uniquely advantageous with adlai is that it thrives well and produces high yield in the highlands, resists common pests, and tolerates water-logging.

Traditional yet Sustainable and Eco-friendly Practices

As the research and development (R&D) arm of the Department of Agriculture (DA), the Bureau of Agricultural Research (BAR) has been looking at the potentials of adlai as a staple crop. With the collaboration of various R&D institutions and organizations, it was found that adlai grows abundantly nationwide.

As part of the initiatives being undertaken through DA's Food Staples Sufficiency Program (FSSP), BAR has been conducting adaptability trials, performance assessment, and farming practices evaluation of different adlai cultivars around the country.

One of these ventures was the "Documentation of Adlai Production Practices in Zamboanga del Sur", which

revealed that 19 out of 33 barangays in Midsalip cultivate adlai, in particular, *gulian* (white) as the frequently planted variety. They also grow the brown (*ginampay*) and the purple or red glutinous (*tapol* or *pulot*) adlai varieties.

The documentation recorded that most of the farmers implement the traditional monocropping scheme for adlai while some grow it with forest trees, root crops, cash crops, and fruit crops. They also practice

to preserve soil vigor and sustainability and to maintain the population of beneficial insects.

After harvesting and ratooning, the farmers clear only the roots to avert from loosening the soil that could lead to erosion which can be very dangerous in an area like theirs that has a sloping terrain. After clearing, the leaves and other plant parts are processed and turned into organic fertilizer.

The farmers shred the panicles with the use of their bare

“ Majority of us have not yet seen nor heard about adlai, but the Subanens have known it all their lives, just like how most of us know and love rice. ”

ratooning for two to three times after the main crop.

Even before the strengthened policies and programs of DA on organic agriculture, the adlai farmers of Midsalip have been employing organic agriculture techniques which enhanced the quantity and quality of their harvest. The use of chemicals such as pesticide and insecticide was not employed

hands and manually mill and winnow them. Most importantly is how they effectively sustain superior seed quality through carefully performing the selection of seeds for planting materials.

The characteristics for selection were based on long panicles, fuller grains, spotlessness, and good tiller standability.



“ What is uniquely advantageous with adlai is that it thrives well and produces high yield in the highlands, resists common pests, and tolerates water-logging.”

Strengthening Agritourism through R&D

Due to the findings that a rich germplasm bank of adlai nestles in Midsalip, the province of Zamboanga del Sur can become more famous not only because of its tourist attractions but also because of its rich agricultural resources including adlai.

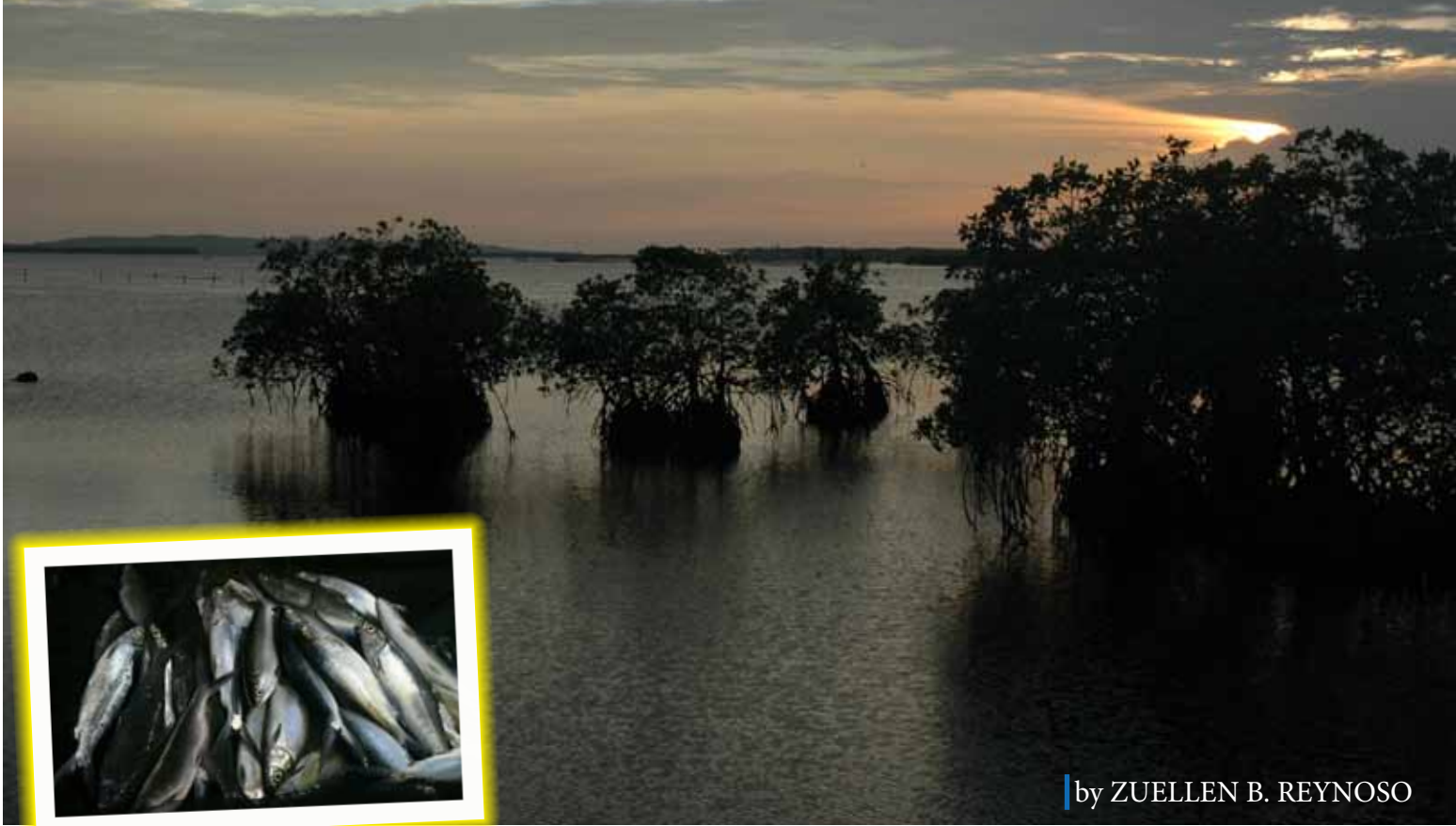
Various subsequent research and projects on suitability and processing implemented not only in Zamboanga del Sur but also in other provinces nationwide have proven that adlai is a significant and healthy crop.

Adlai-based food products are eventually developed and optimized through the

collaboration of R&D partners and local government units. Just like rice, adlai can be processed into rice-based delicacies like *champorado*, *polvoron*, *turon*, *maja blanca*, and *sinukmani*. It can also be processed into flour, soup, broth, tea, coffee, and more.

Surely, a taste of adlai can give anyone a certified Pinoy experience and can truly complete a Zamboanga del Sur getaway. Both visitors and investors are guaranteed a leisure time of being one with the province's scenic environment and being indulged with the delectable delicacies made of the precious adlai. ###

Bohol is Not Just Chocolate Hills



by ZUELLEN B. REYNOSO

Located in the Visayas region, Bohol is known around the world for the famous Chocolate Hills, the Philippine tarsier, and Panglao Island. With the three attractions unique to the province, there seems to be no more room for other destination when visiting the island province. However, the town of Calape in the western coast of Bohol begs to differ.

Apart from the Spanish colonial church famous in the municipality of Calape, the island of Pangangan known

for impressive diving sites are found within its jurisdiction. Pangangan Island plays host to 115 hectares of mangrove declared as Mangrove Swamp Forest Reserve. Resorts within the area promote ecotourism, and now, even Agritourism could be a source invitation for more visitors into the province.

The mangrove forest is a rare site, even for tourists. Although tourists hardly ever visit destinations just to view mangrove sites, it doesn't mean it couldn't happen. As humans are generally inclined towards

rarities, seeing layers of half-submerged trees will truly tickle one's imagination. Add it with an attraction that is knowledge building, you could draw in a bigger crowd.

Pangangan Island plays host to 115 hectares of mangrove declared as Mangrove Swamp Reserve.

A Neighboring Milkfish Project

In the same town of Calape sits a project in collaboration of the Department of Agriculture – Bureau of Agricultural Research (DA-BAR) and the Bureau of Fisheries and Aquatic Resources Region 7 (BFAR VII), Central Visayas Regional Fisheries Research and Development Center (CVRFRDC) geared towards milkfish agribusiness development. A fishpond is located in Bentig, Calape while satellite stations are located in Pangangan Island.

This agribusiness project aims to educate fish farmers, processors and clients the developed techniques in both production and postharvest processes of milkfish. Its beneficiaries are the communities in the area.

Visit the Mangroves, Visit the Project

Agritourism is a relatively new term for an age-old custom of visiting provinces and rural areas with the objective to experience activities uncommon in the cities like picking fresh fruits and vegetables from farmlands.

In the spirit of agritourism, more than simply taking a week-long vacation spending time on activities that you have either done already, or can do back at home, why not take the road less travelled and visit the mangroves in Calape, Bohol, specifically in Pangangan Island.



More than the famous Chocolate Hills, unexplored parts of Bohol still remain. Pangangan Island offers an extraordinary sight of the mysterious mangrove forest, and an eye-opening experience of the BAR-BFAR 7–CVRFRDC project on milkfish production. This vacation could offer you not only unique sights tucked away in the deep mangrove forests, but also learning of an important commodity production that you could actually take back and conduct at home. ###





There's more to Banaue Rice Terraces: The Export Heirloom Rice Tinawon

by LEILA DENISSE E. PADILLA



Imagine carving the mountains to form a stair-like terrain and planting rice in each level one by one with the use of bare hands. A stern handy work one might say but the world-famous 2000-year-old Banaue Rice Terraces was prudently made by the strong and creative hands of the Ifugao ancestors.

Locally known as *Hagdang-hagdang Palayan*, the rice terraces has become one of the most interesting spots in the Philippines. Undoubtedly, because of its beholding sight, withstanding architecture and unique history, tourists from all over the world continue to visit and appreciate the one-of-a-

kind heritage. There is clearly no argument when it received its title as the 8th Wonder of the World. Born by the inventive minds of the Ifugaos, the rice terraces is truly a Filipino pride.

One of the things that made it more significant is that it is planted with the most important staple of the Filipinos, rice. Realizing the steepness and height of their mountains, the Ifugaos made sure to find a way to make their upland territories suitable for farming. Hence, the design of the rice terraces was made in such a way that the irrigation system with rainforests and streams as water source will provide an even and controlled water inflow through each level.



Native Heirloom Rice within the Rice Terraces

Aside from its stunning facade, the rice terraces grows paddies of no ordinary rice. The native heirloom rice is a special kind of indigenous rice that has been planted by the ancestors of Ifugao and other upland tribes. It is a colored glutinous rice that possesses outstanding quality, aroma, texture, color (red, purple or violet), taste, and nutritional value.

Most importantly, the heirloom rice varieties in the rice terraces are organically grown, with no trace of any chemical input. These qualities made the harvest very appealing not only to local consumers but also to foreign buyers. One of the most popular among these varieties is *Tinawon*, which means “once a year”.

History says that one

of the first rice varieties widely grown in the rice terraces is *Tinawon*, a native heirloom rice variety grown only once a year, as implied by its native name. Out of the estimated total coverage area of 4,000 square miles of the rice terraces, approximately more than 27, 500 hectares are planted with *Tinawon*.

Tinawon’s World-Class Quality

The annual harvest was originally consumed by the Ifugaos and their neighbors. As time went by and as more people visited to see the glorious sight of the rice terraces, its heirloom rice also gained popularity and eventually reached the urban markets.

Given the rising demand, tons of heirloom rice are being exported yearly. By 2013, the Department of Agriculture (DA) aims to export a substantial

quantity of premium rice, including the heirloom rice, to different countries all over the world.

This will enlist heirloom rice as one of the popular Pinoy export commodities such as mango, coconut, and abaca. This venture is in line with the DA’s Agri-Pinoy program and its goal to achieve rice self-sufficiency next year.

The exportation of *Tinawon* rice was established in 2006, 11 years after the rice terraces was inscribed by the United Nations Educational, Scientific, and Cultural Organization (UNESCO) as a World Heritage Site. The Revitalize Indigenous Cordilleran Entrepreneurial Initiatives (RICE, Inc.) aims to preserve the production of heirloom rice in Cordillera and its cultural heritage along with the



optimization of product quality to become competitive in the local and international markets.

R&D Support towards Productivity and Competitiveness

As the DA's lead agency for research and development, the Bureau of Agricultural Research (BAR), through its Community-based Participatory Action Research (CPAR) program, has been conducting projects on Integrated Farming System (IFS), a farming technique that combines crop and livestock production.

Most of the IFS projects in Banaue are centered on heirloom rice cultivation along with production of aquatic organisms (ie, *dojo*, an eel-like fish), livestock animals, and vegetables. This farming scheme helps farmers in reducing input

expenditures and increasing productivity because livestock manure are used as fertilizers while crop residues are used as feeds, which enables for a convenient and sustainable source of inputs.

Another project titled "CPAR on *Tinawon* Rice Production using System of Rice Intensification (SRI)" was recently monitored and evaluated. SRI is a technique that promotes early transplanting with proper management and technology to improve the tillering capacity.

The project was conducted in Banaue, Hingyon, and Kiangan to compare the yield performance of *Tinawon* rice using the 1) SRI technology and the 2) traditional rice production technology. Based on the assessment conducted by the Project Monitoring and Evaluation Division (PMED) of

BAR, the use of SRI technology significantly improved the yield performance of *Tinawon*.

Ifugao's Brand, Pinoy's Pride

The potency of the Ifugao culture trails from way back when the Spaniards colonized the Philippines. Not only did the Ifugao succeed to protect their territories from the reigns of the conquerors but they also kept and preserved their rich cultural traditions and values. Indeed, the Banaue Rice Terraces is a portrayal of the Ifugao's strength and resourcefulness and is a magnificent heritage to the Filipino nation. It is something to be truly proud of. Something worth preserving for the future generations. ###

Bangkong Kahoy Valley



One of Quezon's Undiscovered Paradise

by ANNE CAMILLE B. BRION

The agriculture sector continually faces the challenge of producing more food without contributing to environmental degradation. The government, through the Department of Agriculture (DA), has come up with a strategy to address such issue with the enactment of Organic Agriculture Act of 2010. The law pushes for the promotion and further development of organic farming practices in the Philippines with the end goal of benefitting farmers, consumers, and the environment.

Dr. Blesilda M. Calub, a researcher from the Farming Systems and Soil Resources Institute (FSSRI) at the University of the Philippines Los Baños (UPLB) describes organic farming as "farming with a conscience". While this kind of farming holds

the promise of producing quality yet chemical-free produce, it also aids in preserving and maintaining the richness of the soil. More importantly, it ensures that human health will not suffer because there will be no pesticides containing harmful chemicals anymore. With people now becoming more health conscious in order to live longer, this would mean opportunities for organic production. With the right market, the production of organic foods will raise the farmers' quality of life.

BK is into Organic

The province of Quezon is one of the places in the country blessed with fertile lands and topography very suitable for farming various agricultural crops. In the vicinity of Mt. Cristobal and Mt. Banahaw lies a place where a community

of vegetable farmers called Bangkong Kahoy Farmers' Organization for Reforestation and Eco-System Thrust (BK FOREST) is venturing into organic farming. Unknown to many, the said place is called Bangkong Kahoy Valley and is situated at Sitio Bangkong Kahoy, Brgy. Kinabuhayan, Dolores, Quezon. The site gives visitors a first-hand and one-of-a-kind experience of being close with nature. Soothing cool breeze and fresh air will welcome you as you set foot on its vast grassy green lands. Surrounded by trees with the sounds of chirping birds, one will surely enjoy the rich biodiversity of its flora and fauna. BK Valley's ambience makes it a perfect place especially for nature enthusiasts to relax and explore the wonders of one of Quezon's natural paradise.



The law pushes for the promotion and further development of organic farming practices in the Philippines with the end goal of benefitting farmers, consumers, and the environment.

Aside from being delighted with the view, visitors also get to appreciate agricultural activities because they can visit the different farmlands where organically-grown vegetables such as tomato, cabbage, lettuce and cucumber are planted. As a proof that these organic vegetables are indeed safe, visitors can be given the chance to directly pick fresh vegetables from the ground and readily eat them upon harvest since they have not been sprayed with any chemicals. Health buffs need not worry about their food intake because the foods served to guests come from these very same cultivated areas.

Tasked as the national coordinator to further promulgate organic agriculture in the country through the Organic Agriculture RD&E

Program, the Bureau of Agricultural Research has been providing funding support to related R&D projects and is working in close coordination with various stakeholders in view of the program. One of which is a community-based organic farming or agroforestry project in Dolores, Quezon led by the Center for Environmental Law and Policy Advocacy, Inc. (CELPA Inc.) entitled "Sama-samang Pagsasaka sa Organikong Pamamaraan". It is intended to educate farmers on organic farming methods including organic fertilizer and pesticides production and help them establish a market for their produce to increase their income. The community of farmers in BK Valley was tapped as partners and intended beneficiaries of the project at the same time.

Mr. Dionisio "Dion"

Pullan, resident-owner of BK Valley and a firm advocate of the environment, is the one who encouraged the farmers to go organic. According to him, not using chemically-induced pesticides will do a favor not only to the welfare of the farmers but also in the preservation of our natural resources for the sake of the future generation. He was grateful to all the institutions involved in the project which allowed BK farmers to learn the methods of organic farming. He furthered that if only the said initiative will be sustained, this will enable the people of BK to send their children to college.

"Napakalaking ginhawa sa buhay ng tao kapag nagtanim tayo sa organikong pamamaraan", said Mang Carling Cereban, one of the farmer-cooperators who also served as





project beneficiary. He used to be an inorganic farmer. However, he noticed that he gets sick easily with the chemical pesticides that he was using. He began to acquire rashes in the face and often experience shortness in breathing. These symptoms eventually subsided when he began practicing organic. Besides requiring only low-cost production inputs, he added that organic fertilizers are very safe and easy to use anywhere and anytime of the day.

An indigenous fruit crop which is a smaller look-a-like version of strawberries is also

thriving in BK Valley. What they used to call wild strawberry, *Sapinit* (*Rubus rosifolius* Linn.) was later found out belonging to the rose family due to its prickly stem. It was then identified as Philippine wild raspberries. One of the advantages of growing *Sapinit* is that it does not need frequent cultivation, thus maintaining the soil's physical characteristics. Aside from good taste, there are many health benefits associated with this orange-red colored fruit such as its high antioxidant properties.

Like the other vegetables planted in BK Valley, *Sapinit* are also grown organically. They can also be pulled out of the stem and be immediately tasted because they are not given any chemical pesticides. BAR, through its National Technology Commercialization Program (NTCP), together with DA-Quezon Agricultural Experiment Station (QAES), team up in further studying and exploring the crop's

potentials through the "Sapinit Production and Utilization Project". A women organization called Rural Improvement Club in Bangkong Kahoy was tapped for the cultivation of the said project. A Package of Technology (POT) for the culture of *Sapinit* was developed resulting in the crop's increased productivity.

To further promote the fruit, address the issue on its seasonability and perishability, and look at its commercial potential as a sustainable source of livelihood, QAES researched and found ways to develop it into food products such as wine, juice and jam. Through a commercialization project, the towns of Dolores, Lucban and Sariaya in Quezon were selected for the establishment of pilot farms for *Sapinit* production. As more sites become planted with this wonder crop, *Sapinit* products are hoped to be able to make its way and compete in the market soon. ###



BATANES

Abode of the Arius Berries

by LEILA DENISSE E. PADILLA

Even though known as one of the smallest provinces in the Philippines in terms of land area and population, Batanes is the perfect example of “small but terrible”, especially when talking about beauty in nature.

Vast waters, picturesque hilly landscapes, cool weather and rich cultural heritage are what will welcome anyone who sets on a Batanes getaway. With only three out of ten islands being inhabited, this province is considered as an untouched natural wealth taken heed by the brave *Ivatans*.

The *Ivatans*, descendants of Austronesians who resided in the Batanes Islands during the Neolithic period, are witnesses to the growth and

development of the province through time and are stewards of its rich natural resources found thriving in its waters and lands. One of its valued resources is the indigenous Batanes pine named

“The indigenous Batanes pine named Arius, which bears sticky sweet berries seen to have a potential to trigger the economic rise of Batanes .”



Arius, which bears sticky sweet berries seen to have a potential to trigger the economic rise of Batanes.

Not only for the Eyes but also for the Stomach

For a very long time, the Arius tree (*Podocarpus costalis*) is mainly utilized for aesthetics with its lush green needles and relatively small stature. Abundantly growing in Batanes, this tree is commonly found giving an accent of nature to urbanized settings such as parks, plazas, church yards, school grounds and roadsides.

With a height of 1–5 meters, Arius is purposively trimmed for bonsai that is excellent for landscaping and is also fashioned to resemble pine trees used as an attraction during the Christmas season. As a landscape tree, Arius is not only found in Batanes but is also grown in Metro Manila and in other parts of Luzon. The difference is only when it is grown in Batanes that it bears lots of berries that were later found to be delectably edible.

In the earlier times, the locals were used to seeing Arius trees bearing bunches of purple berries but most of them were not interested to see if they are edible or not. The reason behind its abundant growth in the province is the birds that eat the berries and disperse its seeds.

It was later realized that the berries were actually delicious with its saccharine tang and

slightly sultry texture that is now eaten by the locals as fruit dessert.

Looking into the Potentials of Arius Berries

Originally left unutilized, the Arius berries are now given priority by the Batanes State College (BaSCO) located in Basco, the capital municipality of Batanes in the island of *Batan*.

Dr. Roger G. Baltazar, director for research and extension of BaSCO, has been on the lead for this initiative and has submitted a proposed project this year to the Bureau of Agricultural Research (BAR) for funding support under the National Technology Commercialization Program (NTCP). NTCP is one of the banner programs of BAR that supports emerging R&D breakthroughs and mature technologies developed by research institutions.

As the lead coordinating R&D agency of the Department of Agriculture (DA), BAR has been committed on its mission to support the R&D endeavors of partner institutions geared to enhance the Philippine agriculture sector through

studies and projects aiming to improve the potentials of commodities including native crops like Arius.

The project, titled “Processing Technology Development and Utilization for Organically Grown Arius Fruits in Batanes”, aims to develop technologies to be used in the processing of organically-grown Arius fruits and to create value-adding schemes to generate highly-profitable products derived from these berries.

Through the project, many Arius-based products such as tea, wine, jam, preserve, pastillas, and tart are developed. With the project allotment of Php 1.6M from BAR, the promotion of Arius production and the commercialization of its products are now being optimized to ensure the improvement of livelihood and income in Batanes.

More Beautiful with Arius

It is true that tourist destinations have different attractions to offer. Baguio City has its luscious strawberries, Davao has its exotic durian, and now Batanes has its sweet Arius that can invite more and more domestic and foreign tourists to come and taste.

With efforts like the project of BaSCO and BAR, more indigenous crops like Arius and more beholding places in the Philippines like Batanes can become known around the globe. ###



through Adopting a Park

by DIANA ROSE A. DE LEON

Sprawling across all directions, the country veritably has an immense territorial waters and diverse but very productive coastal and marine ecosystem. Despite being only the second largest archipelago country next to Indonesia, the country is a proud bearer of the tagline as world's "Center of Marine Biodiversity", according to a 2005 study commissioned by Food and Agriculture Organization (FAO). That is why the country became a hub for those who appreciate world-class beaches such as in Boracay, Ilocos Norte, and Palawan, and diving spots such as in Anilao, Tubbataha, Puerto Galera, among others.

Yet, these natural endowments may not be enjoyed by the future generations due to their vulnerability in exploitation and degradation brought about by human activities, added by the threats posed by climate change. Continue allowing these things

to happen entails not only losing the natural wonders of the marine environment but also creating instability to the food supply chain as water is a major source of food in the country.

Through the years, the country is showing signs of declining fish and other marine resources productivity. Aside from being the source of food, it is also a means of livelihood of the large number of the population that resides in and nearby the coastal areas. Fishery and fishery-related activities are major sources of income by Filipinos. Without a strong support system to coastal resources management, it is predicted that in the future, capture fishery will not be able to support the fish demand in the country.

Profitable "Parks"

Mariculture park is a holistic approach of water resource management that aims to provide an effective but efficient means of sustaining the supply of fishes and other marine

species through the use of captive rearing in cages. The concept of mariculture park is the same with that of industrial parks wherein the "cage or plot" can be rented or purchased by private individuals or groups (the investors), but instead on the land, it is in the vast sea. They can also invest on putting up certain facilities such as processing plant, postharvest facilities and storage area.

The "cage or plot" can be allotted to various aquaculture activities such as fish cage operation, seaweed farming, mussel and oyster culture, sea ranching, fish sanctuary, and mangrove reforestation.

Due to the ill effects of climate change that may affect the abundance of fish in the seas in the near future, BFAR is ever persistent on encouraging the smallhold fishermen to shift from capture fishery to fish culturing.

Since 2001–2010, BFAR has already established 51

mariculture parks all over the country with a combined area of more than 49,000 hectares and had produced 55,000 metric tons of fish. One of which is located in the Balingasag, Misamis Oriental.

Balingasag is home to a 195- hectare of mariculture park which covered 5 coastal barangays. Launched in 2007, the park serves as the center of fishery-related activities such as aquaculturing, mangroves growing, sea ranching, and sea sanctuary. It now has 243 cages in which majority is occupied for bangus cultivation. In 2010, the volume of milkfish production reached more than 900 metric tons.

Since the operation of the mariculture park, a significant increase in bangus productivity is observed. It is declared as One Town, One Product (OTOP) of the municipality and through the collaboration of BFAR 10 and LGU-Balingasag, the Balingasag bangus is now exported in the United States.

BAR's Involvement

During the visit of Agriculture Secretary Proceso J. Alcala in the Balingasag Mariculture Park, one of the problems arose in the forum opened up by the fisherfolk and the women association of Balingasag is the lack of trainings about the postharvest processing of bangus. As the municipality housed a fish processing plant, value-adding activities on bangus are easier and very appropriate for the municipality.

With this, the Department of Agriculture - Bureau of Agricultural Research (DA-BAR) collaborated with BFAR 10 to conduct a capability-training on milkfish value-adding for the identified members of Balingasag Federated Women's Association.

The main objective of the training is to empower and capacitate the members of the women's association of Balingasag in milkfish post harvest technologies, specifically on processing, value addition, food safety, and packaging

techniques in a fish processing plant set-up.

The five-day training is attended by 34 members of the women's association. The training is divided into two parts. The first half is allocated to lectures in which topics such as basic plant processing, sanitation codes, national standards for milkfish, good manufacturing practices, product packaging and labeling among others were discussed. The other half of the training is allotted to hands-on practice of making bangus relleno, bangus smoking, deboning, and bottling (bangus sardines).

After the training, the next step of BFAR 10, LGU-Balingasag, and the women association is the product development through the improvement of labeling and packaging of the bangus products. BFAR 10 will hopefully again collaborate with BAR in this future endeavor.

With the value-adding on bangus, those who cannot afford to rent a cage on the mariculture park can now have a means of earning an income especially the women. If the Balingasag mariculture park is further developed and be promoted as an aqua-tourism destination, like what the other LGUs had done in their mariculture park, the demand for bangus and bangus products of Balingasag will definitely shoot up and will lead to an increase in the employment in the municipality and nearby towns. ###



BICOL



A Haven for the Queen

by ANNE CAMILLE B. BRION

Famous for its many “eyes” and spiky crown, pineapple is one of the major fruit crops in the Philippines serving not only as a food source but also as an income-generating activity for the various by-products that can be made out of it. Whether consumed as a fresh fruit, canned juice, jam, and candies, pineapple is one of the sought after fruit or snacks because of the healthy benefits associated with it. Being an excellent source of vitamin C, eating it will help strengthen the body’s immune system. Alternatively, its mature


leaves are turned into fibers and woven as high-quality clothes usually worn during special occasions.

Pineapple and pineapple products have been consistent in its ranking as fourth among the top Philippine agricultural exports since 2008. Along other commodities such as coconut oil, fresh banana, and tuna, they are considered to be important contributors to the country’s economic growth. In a data provided by the Bureau of Agricultural Statistics, pineapple and its by-products were able to register higher gains by 48.34 percent from last year.


Opportunities for increasing this figure further may lead to more fruitful gains for the Philippines. Hence, supporting projects involving pineapples would open more possibilities to increase production and enhance its competitiveness both in the local and international markets.

A Thriving Variety in the Bicol Region


Three pineapple varieties are cultivated in the country. The “Smooth Cayenne”, characterized by its cylindrical, very juicy, sweet, aromatic, rich flavor, and long, broad, and



spineless leaves, is commonly used for canning. Meanwhile, the “Red Spanish” which are fairly shaped like a cone and has a bright and clear red color when ripe, is known for its mature leaves which serve as raw materials for piña fibers. The third is “Formosa or Queen Pineapple”. It has yellowish flesh and rich flavor and is tender and crispy. Considered as the sweetest variety, it is often served as a table fruit and consumed fresh.



Making Camarines Norte famous is this third variety, the queen pineapple. It allots about 2,400 hectares of land for the growing of this cultivar and many plantations began to emerge when it has been found to be adapting well in the province’s soil and climate conditions. With the biggest land area in Camarines Norte, Labo serves as a headquarters of an organization continuously working hard to provide employment opportunities to the community and coming up with innovative ideas that would add value to the crop. Known as the Labo Progressive Multi-Purpose Cooperative (LPMPC), it owns most of the plantations in the town and leads the promotion of various pineapple-related livelihood projects and activities benefitting more than 1,000 families and individuals in the area.



Walking in what seems like an infinite green fields surrounded by towering coconut trees, and smelling the sweetness

of a ripened pineapple— these are what visitors would experience upon making a trip at queen pineapple plantations. With assistance from pineapple growers, they can experience the actual harvesting of the fruit right from the ground, and tasting these small yet highly nutritious pineapples that would leave people craving for more. Celebrated in June, a colorful festival called *Pinyasan* Festival is also held which spotlights the queen pineapple. Tourists get to see decorated floats and join agro-industrial fairs which are geared towards the promotion of the said variety.

A number of queen pineapple by-products have been developed and produced by the LPMPC in coordination with different institutions. Branded as *Formosa Manos*, piña cloth is an export-quality handwoven material from its mature leaves which are processed and turned into *barong*, *kimona*, and gowns, or into novelty items such as coin purses and pouch bags. The Queen’s Choice, on the other hand, are dehydrated pineapples which are the counterpart of the famous dried mangoes. There is also the Queench pineapple, their version of an all natural pineapple juice. Containing only the highest grade of fresh juice extract, this healthy drink would surely give a refreshing feeling to a thirsty mouth.

Collaboration among LPMPC, the Department of

Agriculture Regional Field Unit 5 - Bicol Integrated Agricultural Research Center, Bureau of Agricultural Research through its National Technology Commercialization Program, and DA - High Value Commercial Crops Program paved the way for the product development project entitled "Enhancing Competitiveness of the Queen Pineapple in Bicol". Hoping to boost the pineapple industry in the province, the project is aimed at enhancing and sustaining the exportation of fresh and other by-products of the queen pineapple.

Through the project, 10 hectares have been established for the production of the variety. According to Mr. Mario Espeso, general manager of the LPMPC, income generated from these lands will be used to replicate and increase pineapple production farms in Camarines Norte. As for the market development component of the project, the negotiations with foreign trial markets in Hongkong and Korea provided positive feedbacks, though improvements are still needed to satisfy their requirements. Capacity-building initiatives were also done to upgrade the capacities of the members of the cooperative in producing good quality products. As such, trainings on internal quality control system have been conducted for the processing of the fruit, fiber, and other by-products. In addition,

infrastructures were also given focus to make their products more competitive in the market. One is through the establishment of a packing house to improve the packaging materials and labels of the different pineapple products. Processing facilities were also procured for the production of its no-preservative pineapple juice.

In view of supporting the Organic Agriculture Act, the cooperative is also now on its way on expanding its production farms for the planting of organically-grown pineapples, now that there is a booming demand for organic products. As the phase 3 of the project progresses, utilization and further promotion of its by-products are undertaken leading towards the institutionalization of the production of exportable products that can compete in markets outside the country. ###

For more information on Queen Pineapple plantations, you may contact Mr. Mario Espeso of the Labo Progressive Multipurpose Cooperative at (054) 585 2230/447 6565 or email:labopmpc@yahoo.com

References:

1. *Philippine National Standard, PNS/BAFPS 09:2004 for Fresh Fruits – Pineapple. Bureau of Agriculture and Fisheries Product Standards.*
2. *Philippine agricultural exports at a glance. 2012. Senate of the Philippines. Retrieved from: <http://www.senate.gov.ph/publications/AG%202012-02%20-%20Agricultural%20Exports.pdf>*
3. *Updates on Agricultural Trade Performance. 2012. Bureau of Agricultural Statistics. Retrieved from: <http://www.bas.gov.ph/situationer/Trade1/TradePerJan-Mar2012.pdf>*
4. *Official website of the Labo Progressive Multipurpose Cooperative. Retrieved from <http://www.labo-coop.org/>*



Benguet



An Exquisite Haven of Strawberries and More

by LEILA DENISSE E. PADILLA

Cool weather, pine-filled mountains, and fresh vegetables—these are Benguet’s main attractions that invite everyone who wants to escape the city’s scorching heat and constant hustle. With its ambiance filled with nature’s collection of rich mountains, deep valleys and calm springs, Benguet is one of the frequently visited landlocked destinations in the Philippines especially when the summer season falls.

Popularly known as the “Salad Bowl of the Philippines”, the highland province of Benguet in the Cordillera Administrative Region is the leading supplier of the freshest vegetables consumed around the country. As the title implies, the types of vegetables grown in the province mainly serve the purpose of making salads but these greens

can also be used in cooking highly nutritious entrees.

Aside from the fields of vegetables, Benguet is also a home to various fruits attuned to subtropical climate. Known for its bright red color, succulent texture, and sweet-and-sour tang, strawberry is one of the most important fruit crops commercially produced in the province. Because of high quality harvest of strawberries every year, Benguet received yet another deserved title as the “Strawberry Capital of the Philippines”.

Highland Abode of Strawberry Farms

La Trinidad, the capital municipality of Benguet, is where the strawberry plantations are centralized. In the 1960s, La Trinidad rose as one of the leading producers of quality vegetables in the Philippines. And today, based on the records

of the local government unit, more than 70,000 hectares in La Trinidad and Baguio City (a chartered city located within Benguet province) are planted with strawberries.

The strawberry farm in La Trinidad is a famous spot in Benguet not only because of its vast fields full of red and sweet strawberries but also because tourists here are allowed to experience picking for themselves fresh strawberries straight from the shrubs – a truly worthwhile experience that can calm the mind and excite the taste buds.

As the province’s One-Town One-Product (OTOP), strawberry became one of the commodities highly valued by the LGU and the academe. One of which is Benguet State University (BSU) located at La Trinidad which owns 45,000 hectares of strawberry fields.

Commercializing Strawberry Products for Better Profit

With the concerted efforts of the government, private sector, and the academe, the productivity of strawberries in Benguet has been steadily optimized. However, concerns arose when it comes to marketability and product competence.

“Like vegetables, this crop [strawberry] also faces problems on low price and price fluctuation,” said Dr. Jane Avila, professor at the College of Home Economics and Technology in BSU and proponent of the project titled “Commercialization of Enhanced Strawberry and Ubi Processed Products through Participation of Community-based Enterprises”.

This project was conducted in collaboration with the Bureau of Agricultural Research (BAR) through its National Technology Commercialization Program (NTCP), a program that ensures the commercialization of emerging agri-fisheries technologies and highlights R&D innovations and mature technologies developed by R&D institutions.

To increase and sustain the profitability and productivity of strawberry food products through involving the participation of community entrepreneurs, the project aimed 1) to improve the packaging of strawberry products, 2) to transfer the

enhanced technologies to community-based entrepreneurs for commercialization, 3) to assist partners in promoting and marketing of strawberry food products, and 4) to conduct process documentation of the project.

“The Benguet State University has developed processing technologies for strawberry and marketing is being done at the university level. The commercial potential of these products are locally recognized and has a promising potential in the domestic and foreign market. However, the present packaging of the products is not competitive with the industrial food sector,” explained Dr. Avila.

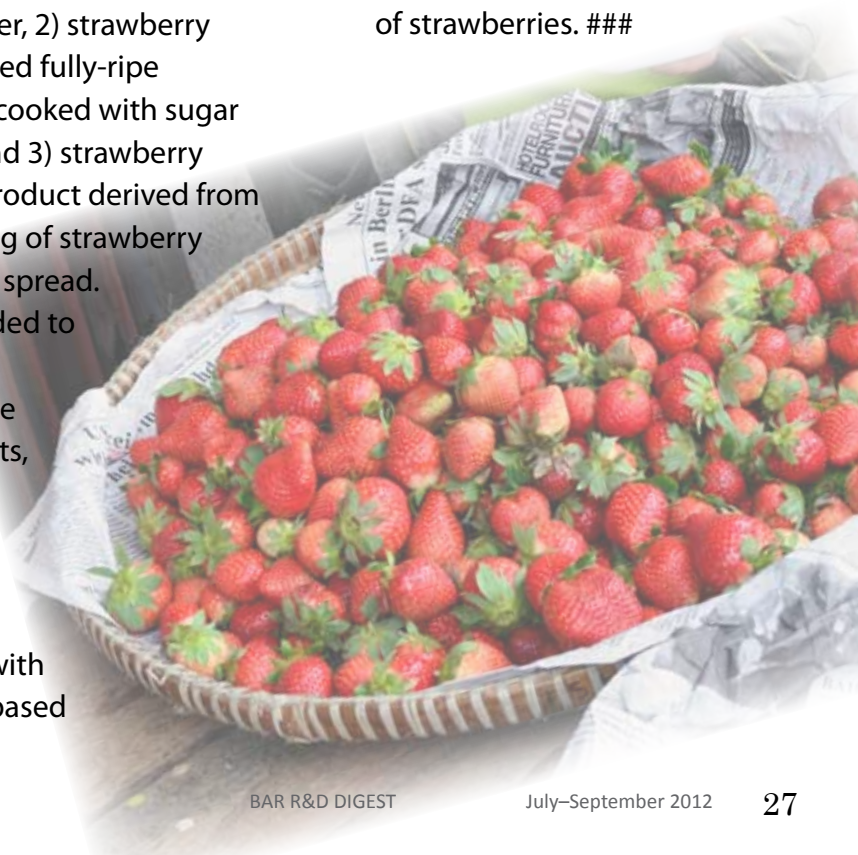
Three strawberry-based products were involved in this project. These are: 1) strawberry preserve, sun-ripened whole strawberries cooked in heavy syrup and packed in sterilized glass container, 2) strawberry spread, crushed fully-ripe strawberries cooked with sugar until thick, and 3) strawberry syrup, a by-product derived from the processing of strawberry preserve and spread.

Intended to promote and commercialize these products, the project proponents established linkage and partnership with community-based

entrepreneurs and conducted consultations with them regarding their concerns on these technologies. After the implementation of product testing, the strawberry product technologies were transferred to the interested local entrepreneurs.

Today, these products are gaining more and more popularity in the local and foreign industry. The venture to optimize the commercialization of strawberry products not only improved local livelihood but also boosted Benguet’s Agritourism that continue to invite tourists not only to have a vacation but also to appreciate and invest in its industry of fresh and high-potential commodities like strawberry.

Indeed, a Benguet experience is never truly complete without having to experience the sight and taste of strawberries. ###





Mundo Hill:

Up Close and Personal

by ZUELLEN B. REYNOSO

The largest city in Mindanao and outside Metro Manila, Davao city is one of the major centers of trade and commerce in the country. Tourists from neighboring regions and around the world visit Davao City as it promotes its natural resources and attractions that bring each visitor back to nature. “Life is Here” the current slogan of Davaoños.

Unfamiliar to many, Mundo Hill is believed to be the treasure chest that holds the age-old Yamashita treasure. It has been said that Mundo (which literally means “world” in English) Hills was the Japanese hideout during the Japanese occupation

in the Philippines, and is the secret hiding place of the famed treasure yet to be found/proven.

Among the many tourist spots in Davao that boasts of its rich natural resource, Mundo Hill is at best, underappreciated. With major tourist spots such as beaches and mountain resorts like those with the view of Mount Apo (highest peak in the Philippines) located in the province, Mundo Hill is the least visited compared to the other well-known spots.

Rubber Production in Mundo Hill

Mundo Hill sits in Marahan, Calinan of Davao City of the Mindanao region. Apart from its cultural heritage,

it now plays a bigger role in efforts to forward research and development (R&D) initiatives in the agriculture industry. Focusing on R&D efforts in rubber production, Mundo Hill provides an excellent site for natural rubber production as its climatic condition is highly favorable for the optimum growth and productivity of the rubber tree.

At the foot of Mundo Hill is the site of the Department of Agriculture – Bureau of Agricultural Research (DA-BAR) and DA – Southern Mindanao Integrated Agricultural Research Center (SMIARC) project on rubber upland farming. With the objective to increase the country’s production of natural

rubber geared towards reducing its importation, the project involves the community within the location through BAR's Community-based Participatory Action Research (CPAR) program. Farming practices such as variety selection, production guides, and postharvest techniques are included within the project to further enhance natural rubber production.

A First-Hand Experience

A visit to Mundo Hill in Davao City is no ordinary experience. Hiking, sight-seeing and camping are just a few of the activities a group of friends or family members can experience in the area. Unearthing the rich history embedded in this land

plus discovering, first-hand, how rubber trees are tapped and harvested for their sap are more than just simple vacation experiences. These are activities where we are able to get in touch with nature, and learn more about the simple things around us, specifically agriculture processes, which only a handful of people are given the opportunity to experience.

Visiting vacation spots with agritourism-themed activities provide experiences that are more exciting and memorable. More than the awe-inspiring sites offered by these natural landscapes, we are given the remarkable

opportunity to learn how agriculture and fishery products are produced—may it be through traditional methods or improved and advanced practices resulting from numerous R&D initiatives throughout the country.

When you visit Davao City, try discovering what Mundo Hill offers—explore the area for the famed Yamashita treasure. Find out for yourself whether the treasure is no more than an age-old myth. Come down towards the foot, and look around the rubber trees. Experience the beginnings of rubber, ask to tap a tree—it could be the cherry on top of your extraordinary vacation. ###





Ilocos' Treasured Bulbs Commercialized



| by DIANA ROSE A. DE LEON

Centuries-old churches, Spanish colonial inspired architectures, white sand beaches, wind mills, sand dunes, and white rock formation, where would you go to see and experience these things? Ilocos.

Located in the western frontier of Luzon, Ilocos is one of the highly recommended destinations if you are looking for a get-away adventure, relaxation, and complete satisfaction. Locus point of some of the prominent happenings in the Philippine history and a “melting pot” of culture made Ilocos a must-visited place in the country.

Yet, aside from the breathtaking sceneries and postcard-like beauty of Ilocos, it is also home of some famous cuisine and food products in the country. Some of which that are well-loved by Filipinos are *dinengdeng*, *dinardaraan*, *dinakdakan*, *igado*, *empanada*, *longganisa*, *bagnet*, *kornik*, and *pinakbet* pizza. True-blue Ilocano tastes which the secret lie to the

spices used such as garlic and shallot.

Creating New Opportunities through R&D

Ilocos region is considered as the largest garlic producer and one of the top producers of shallots in the country. These made these crops as the one of two high-prized agricultural commodities of Ilocandia. These two crops captured the taste and heart of Filipinos due to their aromatic and distinctive flavor that bring out the best to the dishes. This is the reason why one of the popular *pasalubongs* from Ilocos is its spices specially the garlic.

However, the volume production for these crops of the region is dwindling and cannot be maximized its full yield potentials due to various reasons such as high incidence of pests and diseases, excessive use of pesticides and inorganic fertilizers affecting the soil productivity, high postharvest losses, outdated technologies used, and the declining of

interests of the farmers to plant these crops.

This prompted the Department of Agriculture – Ilocos Integrated Agricultural Research Center (DA-ILIARC) to intervene and collaborate with the Bureau of Agricultural Research (BAR) to look for solutions to these problems.

To strengthen the garlic and shallot industry, and to encourage the farmers and various stakeholders to engage into these two crops, two projects under the National Technology Commercialization Program (NTCP) of BAR were put into action. These are: 1) garlic technology commercialization, and 2) technology promotion of shallot/multiplier onion (*Allium cepa*, L.).

Reviving the Dying Garlic Industry

In 2006, from the funding given by BAR, DA-ILIARC developed a Package of Technology (POT) on garlic in which the garlic bulb produced is comparative with that of Taiwan variety in terms of

size but still keeping intact its distinctive smell and taste loved by the consumers. It is made possible through the use of a growth hormone called Gibberellic acid (GA3) which helps in inducing increase in yield by at least 56 percent under the normal Ilocos conditions.

The project is piloted to the Municipalities of Vintar and Pasuquin, Ilocos Norte with 17 FCs. As the POT received an overwhelming acceptability to the other farmers, they have increased the adopters up to 150 farmers in just two years of implementation. The project expanded to the municipalities of San Nicholas and Pinili which led to the formation of association called Association of Garlic Growers and Processors of Ilocos Norte (AGGPIN). From 150 farmers, the project helped more than 900 farmers. It also covered the processing, enterprise development and market strategies formulation. Another association was formed to handle the processing and marketing aspects of the project. This is the Siwawer Garlic Products Association. The off-sized garlic bulbs that cannot command a good price were utilized for processing.

Through the assistance of Mariano Marcos State University (MMSU), the association was updated on the available technologies for garlic processing. They are currently producing pickled garlic, garlic-

peanut adobo, garlic flakes, garlic powder, garlic chips, garlic-enriched *miki* and garlic-flavored polvoron. The BAR funded the acquisition of equipment and food nutrient analysis. The processing laboratory was housed in DA-ILIARC, Batac City.

To strengthen this village-level enterprise, the association was registered to the Department of Labor and Employment. Currently, they are working on the construction of a hangar storage which will serve both as a storage area, processing area, office, and display center.

Bunching Impacts of Shallot Project

Ilocos Norte, Ilocos Sur, and Pangasinan are the major producers of shallot that accounts to about 35 percent of the national production. To be able to make the shallot industry in Ilocos region be more competitive, in 2010, BAR has funded the technology commercialization of shallot. DA-ILIARC developed sets of technology enhancement combinations (TCs) for shallot farmers.

The project is piloted in the shallot growing municipalities of Vintar, Ilocos Norte and San Juan Ilocos Sur. The shallot farmers there were experiencing high incidence of pests and diseases such as tangle top or twist (*ocho-ocho* or *kurkurita*) and bulb rot and insect pests like army worm, thrips, and mites. They deemed to overuse

chemical-based controls and inorganic fertilizers. As organic agriculture is what the DA is promoting, the project implementers opted to formulate TCs that have biological interventions so that the goal of going organic will not be a far-fetched advocacy.

They have found out that the most effective TC in terms of increasing shallot yield, controlling the pests and diseases, and regaining soil fertility is the combination of bio-organic fertilizer + bio-fungicide + fruit extract biofungicide + bio-control agent + bio-insecticide + light trap for insects + liquid microbial organic fertilizer. The use of these technologies resulted to a yield as high as 20 tons per hectare compared to 10 tons per hectare of the traditional shallot farmers' practice.

Another component of the project is the value-adding of shallot. They are able to develop products such a whole shallot pickle, chopped shallot pickles, dried shallot chips, and shallot powder. These products already had nutrient analysis, and making its way to the local market of Ilocos.

The projects were able to give birth to the processing potentials of garlic and shallot. Aside from its raw form, Filipinos can now enjoy garlic and shallots in their processed forms and add them to their list of *pasalubongs*. ###



Three pineapple varieties are cultivated in the country. The "Smooth Cayenne", characterized by its cylindrical, very juicy, sweet, aromatic, rich flavor, and long, broad, and spineless leaves, is commonly used for canning. Meanwhile, the "Red Spanish" which are fairly shaped like a cone and has a bright and clear red color when ripe, is known for its mature leaves which serve as raw materials for piña fibers. The third is "Formosa or Queen Pineapple". It has yellowish flesh and rich flavor and is tender and crispy. Considered as the sweetest variety, it is oftenly served as a table fruit and consumed fresh.



Bureau of Agricultural Research
RDMIC Bldg., Visayas Ave., cor. Elliptical Rd.,
Diliman, Quezon City 1104
