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PHOTO: EAGRON

At the break of dawn

A fisher-member of the *Samahang Mangingisda ni Apo San Rafael* engages into simultaneous launching of gillnets at the Manila Bay to catch blue crab (*Portunus pelagicus*). This activity portrays oneness and harmony among members as a result of the value orientation and training conducted by DA-BFAR Region 3 and LGU of Bataan in the implementation of CPAR project, “Bluecrab Fishing using Gillnets for the Marginal Fisherfolk of Bataan”.



BARDIGEST

Official quarterly publication of the Bureau of Agricultural Research

ISSN 1655-3934



BINHI AWARDEE (2007)
Agricultural Magazine of the Year
FLORENDO AWARDEE (2004)
Outstanding Information Tool for Print

Volume 11 Issue No. 4

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

October - December 2009



FEATURING:

Results from BAR’s Community-based Participatory Action Research (CPAR) and Agribusiness Development Projects (ADPs) in Mindanao

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, updates, and breakthroughs in agriculture and fisheries R&D based from the studies and researches conducted by the national RDE networks.

Created by virtue of EO 116, BAR is mandated to ensure that all agricultural researches are coordinated and undertaken for maximum utility to agriculture. Further, EO 127 and 338 reinforced and expanded the roles of BAR in the central coordination and management of agriculture and fisheries R&D programs.

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PHOTOS: ARTOFAGRIBIZ

Commitment and the strong bayanihan spirit of the members of the Mother of Hope Rural Improvement Club (RIC) are two reasons why this organization has bagged the Outstanding RIC award in Region X for five years running.

Organized on July 10, 1989, the Mother of Hope RIC started with just 159 members and a seed capital of only P508.00.

But with grants and loans from the Department of Agriculture and its attached agencies, and the dogged determination to succeed, Mother of Hope has been able to embark on many projects designed to uplift the lives of the members.

Among the most successful were

The aggressive RIC plans to expand further to include projects on cassava, cutflower, and coffee production, communal piggery, aquaculture, poultry, and cattle and goat dairying ventures.

the sugarcane farming, cassava farming, small and large animal's dispersal, maintenance of solar dryer, communal garden and the lending activities.

These programs provided the

Pangantukan women folk livelihood they badly needed to not only earn an income but also to improve their self esteem.

From the meager income of about P500, the club's earnings shot up to P104,890 in 2004 and P 89,440 by 2005. Assets, meanwhile, grew from P 508.00 to P 633,171 in 2006.

The organization also promotes good nutrition by planting vegetables in the members' backyards to address hunger and malnutrition in the barangay. The RIC also spearheads the feeding of malnourished children five times a week by soliciting food and financial support from the different civic organizations.

The group is actively involved in advocacy campaigns, such as environmental and beautification

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expensive it is. The lactating mash that TADAFCO formulated is essential to produce large volume of quality milk with 20 percent CP.

Mr. Javier Oliveros, a TADAFCO farmer-member, said that "In the feeds that we produce, the CP is higher but still cheaper. This is indeed good news for small dairy farmers like us. For members, we sell the feeds P13.20/kg while for non-members we sell it for P16.50/kg so that for every kilo that we sell, our Coop earns additional P3.30/kg net profit."

TADAFCO Chairman Patricio S. Ultiano, the CPAR project on dairy cow feeds processing is a big help for the small dairy farmers in Tacunan. "There was a big increase in our milk production and we earnestly hope that with the good results of this project we will be able to encourage more farmers to go into dairy farming and contribute more to the national production of milk in the country," he said.

"Prior to this CPAR project, our average daily milk production is 104 liters which amounts to P14,560. After we started formulating our own feeds, our average daily milk production is 117 liters of P16,380. On a daily production basis, we get a net profit of P1,820 or P7,280 monthly," Ultiano added.

Cantilla, said that although the CPAR project is still in its early stage of implementation, good results are already being reaped by the beneficiaries. "We are hoping that more dairy farmers will be able to adopt the technology introduced in this project so that more of them will be benefited not just the Tacunan dairy farmers."

This article was based on the study titled, "CPAR: Dairy Cow Feeds Processing in Brgy. Tacunan and Ula, Tugbok District, Davao City" by Myrna S. Cantilla of the Department of Agriculture-Southern Mindanao Integrated Agricultural Research Center (DA-SMIARC), Bago Oshiro, Mintal, Davao City.

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R&D Notes

Making a difference

by DR. NICOMEDES P. ELEAZAR, CESO IV

With this issue of the **BAR Digest**, we have completed our national reporting and documentation of CPAR activities of BAR. We have every reason to be proud of our accomplishments. We are humbled by the enormity of tasks demanded by our intervention.

The lessons learned from the past did not provide the great turnaround needed by agriculture to be globally competitive. However, the people who live in rural communities have a storehouse of potentials that remain untapped. They have not lost their hope that something can be done to turn the tide of development in their favor.

Despite our optimism, we are careful not to repeat the negative lessons from the past. Be that as it may, we are in research and development; we know that we can, indeed, do something to reverse the present state of agriculture. We are very much concerned with the plight of small farmers whose limited production does not generate enough surplus for the market and, therefore, profit.

We know that something drastic must be done. This is the reason for BAR to adopt two complementary banner programs – CPAR and National Technology Commercialization Program (NTCP). BAR knew that agricultural development is technology-driven and its role as the engine of development is real. Its potentials must be harnessed to benefit the marginalized rural communities. However, BAR is fully aware of the global lesson from the past – that technology alone is not the answer. In fact, to a certain extent, technology transfer has created irreversible havoc on the agricultural environment – abuse in the use of inorganic fertilizers and pesticides are illustrations of this.

BAR knew very well, that without developing innovative solutions, it can also be trapped in simply repeating the lessons from the past. In the true spirit of research, BAR took the thrust of Medium-Term Development Plan (MTDP) as agribusiness development and used it as the goal of RDE. The recommendations of the AFMA evaluation proved timely because of its emphasis on the need to adopt a framework of action focused on resource management for agricultural development.

It is unfortunate that the need for a framework in the design and implementation of agricultural programs was not given much attention before. We can, indeed, escape from the vortex of failure if we adopt a framework of action – resource management.

BAR is now more confident in its strategy because it knew that the key to management is decision-making. Therefore, the new agriculture must be information driven. To raise the

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PHOTOS: EAGRON

competitive level of agriculture, it must have access and control of the right information at the right time. Attention to innovative information has indeed, become a way of life.

In our implementation of CPAR, we made sure that we are creating an environment of making farmers sensitive to information and effective users of information. With the new management scheme of production farmers are organized through participatory action research. Instead of being made mere recipient of technology and information, they are made partners in the research process where their pool of knowledge is put to good use.

As amply illustrated in our CPAR projects, the active participation of farmers through their organization proved empowering. Project gains were easily institutionalized and the spiraling effects of development were felt by the farmers. With CPAR, our farmers are trained on the various uses of information technology. To reverse the trend in rural poverty, farming systems development through the modality of diversification was instituted by CPAR.

To ensure the success of CPAR implementation, a collaborative and integrated support system was instituted. The critical role of the local government units (LGUs) in the overall design of CPAR was noted in project management. The LGUs together with our other partners fully collaborated in its implementation. This created the right synergy for enhancing further our implementation gains.

We took note of the interaction between technology transfer and community development in our CPAR projects. These two, in reality, are complementary. In our way of thinking, this was the missing link in the design of earlier interventions. As reflected in our successful CPAR activities, the complementation of five key resources such as social, technical, economic, environmental and political were institutionalized through action planning.

As one reads through the CPAR reports, one will not miss the attention we gave to issues related to gender in development. The participation of women in livelihood related activities was critical to project success. In fact, we have supported the organization of women for enterprise development. Participatory education is the backbone of CPAR implementation.

We can proudly claim that through CPAR, we have made a difference in the lives of our farmers in the rural communities -- that difference is turning fate into faith -- the future of agriculture as business is assured!



PHOTO: RDELACRUZ

PHOTO: RBERNARDO



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production is another thing. One of the benefits of establishing the CPAR is the new knowledge and skills gained during the project's implementation.

Training of farmer-cooperators was conducted based on different production and processing technologies of the project components as identified by the stakeholders and farmers.

Exposure trips to successful and established farms were also provided to the farmers before the project implementation to enhance their understanding on diversified farming system approach. Likewise, trainings on the various component technologies particularly on rubber production and rubber-based farming system, swine and poultry production technologies, leadership and skills management, organizational strengthening and values reorientation, product improvement/value-adding, livelihood, and entrepreneurial activities were undertaken.

It is hoped that through this project, there will be more than a ripple effect on the nearby communities.

This article was based on the study titled, "CPAR in Promoting Upland Resource Management and Increasing Farmer's Income in Rubber-Based Farming System at Zamboanga City" by Geromo, FB, et. al of Western Mindanao Integrated Agricultural Research Center, Sanito, Ipil, Zamboanga Sibugay; telefax No.: 062-333-2537; e-mail: wesmiarc@yahoo.com or wesmiarc@hotmail.com

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well as commitment of key project implementers have significantly contributed to the successful implementation of the project," Dumayaca said.

The roll-over scheme that the project instituted has enabled other interested and qualified farmer-partners to avail of the input assistance. Repayment rate can be an indicator of how committed and how responsible the farmer-partners are in contributing to project success.

"Additionally, since CPAR involves social preparation of all farmer-recipients, this has led to empowerment of members of the community," Dumayaca added.

The PEACE project has indeed flourished to help eradicate poverty and hunger by providing target beneficiaries with opportunities to achieve self sufficiency in income generating projects that augment household income thus enabling the people to lift themselves out of poverty.

Dumayaca concluded by saying her vision for Lanao del Norte: "Sustainable agricultural productivity—vital to ensuring food security and a stable peace and order situation in the province".

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PHOTO: ARTOFAGRIBIZ



PHOTOS: RBERNARDO

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Intercropping of rubber with cash crops has been well-practiced and has greatly benefited farmers. Earlier studies showed that intercropping not only accelerates rubber growth and prolongs the rubber production period, but it also brings high economic, ecological and social benefits in a short time.

For this CPAR project, the aim is to establish rubber plantations with specific components geared towards increasing productivity and income of farmers. Among the package of technologies (POTs) introduced in the project site are crop and poultry production and crop-animal production management. These packages of technologies were

developed and generated locally for easy adoption and verification in other areas with similar bio-physical and socio-economic conditions.

Specifically for the rubber-based farming system, the crop diversification components include: rubber + banana + fruit trees + corn – peanut/mungbean. For the crop-animal integration, the components are: rubber + banana + fruit trees + corn – peanut/mungbean + poultry + swine.

The demo farm on rubber-based farming system is farmer-managed which serves as a model farm for other farmers and nearby communities to emulate.

The project introduced various

practices to improve the production management of upland farmers including plowing and harrowing, and the use of proper planting distance and appropriate spacing of intercrops.

Meanwhile, for the crop-animal integration, productions of improved native chicken or upgraded breeds of swine and/or small ruminants were introduced to augment the income of the farmers. Upgrading of animals was conducted through artificial insemination in collaboration with the Offices of the Provincial and Municipal Agriculturists.

Establishing a development project is one thing, empowering the upland farmer cooperators to equip them towards sustainable

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We live in a world defined by innovation and change. And since change is the only constant in this world—either we learn to accept and adopt or we disregard and get lost in space. In Research and Development (R&D), change and innovation are indispensable for every institution that aims to stand the test of time. These play important roles in bringing in new technologies vital to farmer-led improvements.

PHOTO: NOMIARC

One institution that welcomes innovation and change is the Northern Mindanao Integrated Agricultural Research Center (NOMIARC), the research arm of the Department of Agriculture (DA) in Region 10, as it plays an important role in generating various technologies on crops, livestock, and integrated farming systems. As an institution driven by change, it continues to reassess its directions and priorities vis-à-vis the needs of the agriculture stakeholders.

In a nutshell

Located at the foot of Mt Kitanglad in Dalwangan, Malaybalay City—NOMIARC was established in 1991 through Administrative Orders 6 and 19. The center is mandated to conduct R&D activities geared to generate, develop and transfer market-driven, sustainable, competitive, economically-feasible and environmentally-viable technologies that are responsive to the needs of the farmers and the agricultural sector.

As an innovator of new ideas,

products, and services that boost productivity and profitability of farmers and rural communities, NOMIARC serves as the nerve center of four satellite R&D stations in DA-RFU 10 with specific commodity focus. These are: 1) Malaybalay Stock Farm (large animals, specifically Brahman and Simbrah Cattle; 2) Regional Crop Protection Center (biological control agents); 3) Bukidnon Agricultural Productivity Center (plantation crops and grains); and 4) Claveria Experiment Station (semi- temperate vegetables).

Aside from conducting and implementing researches, the Center collects and maintains germplasm, produces and distributes high quality seeds and planting materials, and extends training/technical assistance to agriculture stakeholders in the region.

The heart of NOMIARC

At the heart of any great institution are the people whose vision and talent are its moving force. NOMIARC is manned by a small but competent

group of 21 technical and 9 non-technical staff of various fields of specialization who devote their time, effort, and knowledge for the improvement of the farming communities.

Center manager, Juanita Betonio-Salvani described them as people "who depict excellence in the exercise of their professions and demonstrate exemplary character and command the trust and respect of the agriculture and rural community."

But the success of any organization is owed to the person who is turning the wheel. For 17 years, NOMIARC has been managed by top caliber and technically-competent managers with strong determination to come up and push programs and projects in conveying scientific findings to the farming communities.

It was only in 2007 that Salvani took her post at NOMIARC as manager but she has been in service to the

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government for 32 years. Being the main person who drives the wheel, she has reaped the rewards of diligence and commitment for her untiring efforts in providing highly-relevant and award-winning agricultural researches when she joined the agency.

One significant and highly commendable accomplishment of Salvani is her notable contributions to the development of the root crops industry in the country. Her study on the National Cooperative Testing on Gabi which required a lengthy process of collection and evaluation of 18 different gabi varieties in Northern Mindanao resulted to the approval of the VSP VG 3, locally known as Claveria Gabi #3, by the Philippine Seed Board (PSB).

Being the lead researcher to handle the regional trials on root crops since 1980, Salvani has been conducting a series of evaluation of the promising cultivars of sweet potato resulting to the approval of 12 varieties—VSP, UPLB, and BPI series.

Given Salvani's hardwork in continuously fostering agricultural productivity and profitability, she was given the country's Gawad Saka Outstanding Employee award (Applied Research category) in 1995. This also gave the due recognition of the Center and the region.

In all her accomplishments as a researcher and as a center chief, Salvani



PHOTO: ALIBABA.COM

is a profile of self-confidence and decisiveness. "Self reliance and the conviction to do all work needed for the welfare of the farmers serve as my strengths for success," she professed.

Milestones and accomplishments

Known for its tangible accomplishments in potato R&D, NOMIARC is recognized as the White Potato Center of Mindanao, a feat that paved the way to the establishment of facilities and support systems. The Center invested in the installation and institutionalization of work systems and state-of-the-art facilities in the plant tissue laboratory, bacterial wilt and virus detection laboratory, and

screenhouses to better serve the potato farmers not only in Region 10 but in the whole of Mindanao as well. Among its astounding accomplishment in potato research is the development and commercialization of disease-free white potato planting materials through rapid multiplication technique (RMT) which stabilized the seed supply in the region and reduced the incidence of bacterial wilt and virus disease.

NOMIARC is also the Zonal Center for Agricultural R&D in Mindanao leading in the earmarking and inception of inter-regional projects, specifically on organic agriculture in

Known for its tangible accomplishments in potato R&D, NOMIARC is recognized as the White Potato Center of Mindanao, a feat that paved the way to the establishment of facilities and support systems.



PHOTO: NOMIARC

Rubber tree (*Hevea brasiliensis*) was introduced to Southeast Asia, including the Philippines, as early as the 1900's. But it was only in the 1950's when local private corporations started establishing rubber processing plants in Mindanao. Aside from generating employment in the rural areas and planting rubber in idle hillylands and uplands, rubber cultivation enhances environmental rehabilitation being an excellent plant species in the sequestration of carbon dioxide from the air.

to: 1) showcase rubber-based farming system technology in upland areas; 2) train farmers/people organizations in sustaining projects through their concerted efforts and active participation; 3) enhance farmers' skills on improved technologies through capability and capacity-building activities; and 4) strengthen partnership/collaboration through linkage and network among LGUs, people's organizations and other key players.

One important aspect of this project is the placement of high premium on community-based natural resource management (CBNRM) in addressing the poor agricultural economic condition of upland farmers in the project sites. This is to be achieved by increasing both the productivity and income of the upland farming communities while conserving the ecological system of the area at the same time.

In CBNRM, members of the communities take the lead role by involving themselves in major decisions on how the natural resources are to be

used and conserved.

The CPAR project is being implemented in Calabasa, Curuan District and Sibulao, Vitali District in Zamboanga City. Although these two adjacent barangays produce high-value agricultural crops including fruit trees, corn, upland rice and rubber, they are considered among the economically-depressed areas in the region. Since most farmers are only committed to traditional upland farming practices of monocropping short-term crops, most of the farms are left idle and unproductive after the corn cropping season.

An important component of this CPAR project is the establishment of a rubber-based farming system that serves as a show window of the interventions introduced, vis-à-vis, the farmers' existing practices.

Why a rubber-based farming system?

According to reports from the Bureau of Soils and Water Management (BSWM), out of the 1,158,714 ha potential area suited for the expansion of rubber and other industrial crops in

Mindanao, 395,765 ha are found in Region 9 and the dominant potential areas for expansion are in the uplands.

Currently, a total of 38,878 ha are planted to rubber in the region with 131,546 MT production accounting for a 60 percent of the total share in the Philippines.

Rubber tree (*Hevea brasiliensis*) was introduced to Southeast Asia, including the Philippines, as early as the 1900's. But it was only in the 1950's when local private corporations started establishing rubber processing plants in Mindanao. Aside from generating employment in the rural areas and planting rubber in idle hillylands and uplands, rubber cultivation enhances environmental rehabilitation being an excellent plant species in the sequestration of carbon dioxide from the air.

Planting rubber is already an income-generating activity but since it is a perennial crop, intercropping it with shorter duration annual and cash crops such as banana, fruit trees, corn and legumes offers a "win-win" scenario.

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Upland farmers in Zamboanga find hope in CPAR rubber-based farming system

by Rita T. dela Cruz



PHOTO: RDELACRUZ

Planting rubber is already an income-generating activity but since it is a perennial crop, intercropping it with shorter duration annual and cash crops such as banana, fruit trees, corn and legumes offers a “win-win” scenario.

Situated outside the typhoon belt, Region 9 or the Zamboanga Peninsula has a good agro-climatic condition and a favorable soil type suited for planting high value crops. Despite these advantages, agriculture, particularly in the uplands, remains unproductive and the farmers are still living at subsistence level.

One of the identified problems is that, most upland farmers still practice the mono-cropping system resulting to low production and poor soil nutrient capacity due to continuous planting of the same crop year in and year out.

Given the major thrusts of the government on hunger mitigation, poverty alleviation, and ecological rehabilitation, there is a need to develop practical farming systems, sustainable farm practices, and intensive extension services in the uplands. Hence, a Community-based Participatory Action Research (CPAR) was introduced to empower marginalized upland farmers to make use of their locally available resources, plan their activities and execute these plans in a participative way.

With funding support from the Bureau of Agricultural Research (BAR), the project titled, “CPAR in Promoting Upland Resource Management and Increasing Farmer's Income in Rubber-Based Farming System in Zamboanga City” is being implemented by the Department of Agriculture- Western Mindanao Integrated Agricultural Research Center (DA-WESMIARC).

In collaboration with the Agricultural Training Institute (ATI), local government units, and farmers association, the project hopes to improve the lives of upland farmers by increasing their productivity and profit through community-based participatory activities and initiatives.

Specifically, the CPAR project aims

One important project with BAR that has generated high-impact results is the Community-based Participatory Action Research (CPAR) which continues to build and promote farming communities in the region.

Mindanao, and coordinating with the various Regional Integrated Agriculture Research Centers (RIARCs) and Regional Fisheries Research and Development Centers (RFRDCs) in Mindanao in the orchestration and implementation of a unified and integrated RDE program for the island.

In 2000, NOMIARC was organized as the Regional RDE Network in the country leading to the creation of the region's Farmers/Fisherfolk Industry Advisory Council (FIAC).

Keeping their R&D priorities and directions in line with that of the national programs, NOMIARC formulated and implemented the Regional Integrated RDE Agenda and Program (RIRDEAP) for Agriculture, Fisheries and Natural Resources in consultation with the regional R&D consortium and member-agencies.

In order to bring the results of R&D to the grassroot level and emphasize strong partnership with the private sector and industry, NOMIARC has been conducting “Annual Farmers' Field Days and Technology Forum” for 15 consecutive years since 1994.

Given NOMIARC's bottom line for success—true service, stewardship, and professionalism—the Center and its

workforce continue to reap awards and distinctions from various national commending bodies. For its vigorous efforts, the center was given the “PAGASA Award for Outstanding Work Performance” in 2005.

Moreover, NOMIARC research paper entries have been reaping awards in agency in-house reviews and regional symposia. The Center has also grabbed distinctions/awards in the AFMA Best R&D Paper competition which is conducted during the National Research Symposium (NRS), conducted annually by the Bureau of Agricultural Research (BAR). Among its winning papers are: 1) Corn Technology Showcase Program in Anlutan, Cabanglasan, Bukidnon: A Successful Community-based Participatory Action Research Model (second place, socio-economics category, 2006); 2) Enhancing Adaptation and Utilization of Location-Specific Corn-Based Technologies in El Salvador, Misamis Oriental (first place, adaptive research category, 2003); and 3) Rapid Multiplication Technique (3rd place, development category, 2002).

The Center has implemented research projects and production support activities with funding support from Department of Agriculture (DA), DA-Bureau of Agricultural Research (BAR), DA-Bureau of Plant Industry

(BPI), PhilRootCrops, Philippine Council for Agriculture, Forestry and Natural Resources Research and Development (PCARRD), PhilRice, and international R&D Institutions including Australian Center for International Agriculture Research (ACIAR), Food and Agriculture Organization (FAO), Agrico, AVRDC (The World Vegetable Center), and International Crop Research Institute for Semi-Arid Tropics (ICRISAT).

Significant BAR-funded projects

NOMIARC is an institution that looks at real progress as something that requires a level of cooperation among its workforce and collaboration as a rule rather than an exception. To achieve this, NOMIARC works closely with various R&D partners which collectively develop productivity-enhancing and cost-reducing technologies for farmers.

BAR has been providing fund support to various research activities of the Center. One important project with BAR that has generated high-impact results is the Community-based Participatory Action Research (CPAR) which continues to build and promote farming communities in the region. In CPAR, value of project ownership, sense of responsibility, and effective resource-based management are inculcated in the beneficiaries. Not only are the farmers kept abreast with

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the latest farming technologies, they also feel valued and esteemed as important partners in total community progress.

Since 1999, BAR has supported nine CPAR projects of NOMIARC of which five are completed and four are on-going. The four on-going projects are: 1) Sustainable Backyard Swine Raising for Increased Productivity; 2) Integrated Coco-based Farming Systems in Northern Mindanao; 3) Integrated Corn-based Productivity Enhancement in Selected Corn Expansion Areas of Northern Mindanao; and 4) Vegetable-Based Research Development and Extension Program for Enhanced Productivity of Highland Vegetable Farmers in Region 10.

In 2007, NOMIARC started the CPAR-Productivity Enhancement in Agriculture through Community Empowerment (PEACE) project. This is an ongoing initiative in Baroy, Lanao del Norte that promotes people access to technology interventions and opportunities to augment household income. With opportunities created by the project and the continuing cooperation of community members, more and more of the community folks are experiencing increased income and improved living

conditions.

One offshoot of the CPAR project that has empowered the community partners in Alugan, Cabanglasan, Bukidnon is the Expanded Corn Technology Showcase Program (ECTSP) that was operationalized in 2003-2004. Even with the end of project's financial assistance in 2004, the project led to the birth of an organized rural community in Anlutan. Community leaders and members sustained the project by successfully rolling-over the benefits to seed the corn production endeavors of other farmers. Also, technologies continue to be availed of and fully utilized which have enabled farmers to increase their corn farming income and become more effective in coping with diverse farming challenges.

Other BAR-supported programs being implemented by NOMIARC are: 1) Sweet Sorghum R&D Program, 2) Site-Specific Nutrient Management Program for Corn, and 3) Field Testing of ICRISAT Legume Varieties.

The Sweet Sorghum R&D Program led to the identification of potential varieties best for grain and fodder

production (SPV 422), and the highest stalk and stripped stalk yielder (ICSV 93046) at 56.85 mt/ha and 22.89 mt/ha, respectively, while the Site-Specific Nutrient Management (SSNM) Program for Corn in Region 10 has posted an incremental corn yield of 1.7 mt/ha compared to the existing farmers practice (1.08 mt/ha) which showed that beneficial for increasing corn production income.

Coping with challenges

Since 1992, the Center has been serving the whole region in helping catalyze agricultural development. Given the challenge of the time - climate change, NOMIARC promises to sustainably generate climate change adaptation, mitigation and preparedness strategies/technologies. These technologies include researches on alternative biofuel crop sources and adaptable legume varieties that improve yield even under adverse conditions.

NOMIARC continues to direct its efforts to R&D innovations that increase farming productivity and profitability, and ensure food security.

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Although a small organization, its limited human resource and the movement of some technical staff to the regional office, NOMIARC adapts by diversing tasks. However, in spite of a rather trimmed down staff complement, the Center copes through multi-tasking of staff assignments, and hiring of contracted labor services. Staff members are being sent to trainings and educational activities to continuously upgrade skills thus sustaining quality service delivery. Efficiency and competence level of human resource has proven effective in dealing with organizational challenges.

Bringing the appropriate technologies to farmers is considered as one of the big challenges of the Center,

according to Salvani. "However, believing in the value of partnerships, we at the Center ensure that coordination with concerned LGUs and other relevant stakeholders is properly facilitated by steadfastly working in partnership with various agencies, LGUs, private sector, and the public.

NOMIARC vows to sustain its concerted push to boost agricultural productivity ensuring that all of the lessons learned are applied and adopted for the future under a sense of urgency and commitment.

"We can only gauge progress if generated technologies in the center are utilized by the farming communities. Only then can success be truly claimed," Salvani concluded.

For more information about NOMIARC, please contact: Juanita M. Salvani, manager, Dalwangan, Malaybalay, Bukidnon, Tel. Nos. (088) 230-3145-47

"We can only gauge progress if generated technologies in the center are utilized by the farming communities. Only then can success be truly claimed."



PHOTO: NOMIARC

In 2007, NOMIARC started the CPAR-Productivity Enhancement in Agriculture through Community Empowerment (PEACE) project. This is an ongoing initiative in Baroy, Lanao del Norte that promotes people access to technology interventions and opportunities to augment household income.



CPAR Sibagat...from page 10

As of the moment, no concrete data are available particularly on the yield of their banana plant since they have just started harvesting small bunches since these are leftovers of the banana bunchy top ravaged fields. Meanwhile, the farmers' abaca plants are not harvestable yet. On the other hand, harvested gingers were used as planting materials for their expansion area.

Among the objectives set, the one that is highly noticeable is the empowerment of farmers through capacity development program and hands-on application of improved technologies. There is a noticeable attitudinal change among the farmer-cooperators already. However, the impacts are expected to happen in the coming years as it would be indicated by the increased income of the farmers.

As for the assessment of the project, Ms. Maslog has this to say: "We can claim that this project is a successful one. We were able to reach out and touch the farmer-cooperators' lives. However, we have to continue everything that we started until the projects that we established with them become a part of their way of life."

This article is based on the study titled, "Community-based Participatory Action Research Program in Sibagat, Agusan del Sur" by Wilfreda M. Maslog of the CARAGA Integrated Agricultural Research Center (CARIARC).

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Mothers...from page 31

programs. For the benefit of the poor residents, the group is also involved in the Gawad Kalinga housing project.

Recognizing the efforts of these rural womenfolk, the local government unit elevated Mother of Hope to the Hall of Fame by virtue of its being named outstanding RIC from 2002 to 2006.

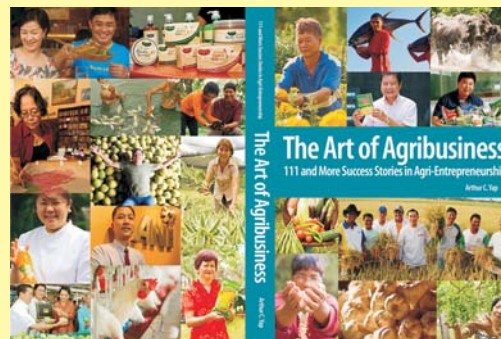
Mother of Hope, however, has no plans of resting on its laurels.

As if its major projects were not enough, the aggressive RIC plans to expand further to include projects on cassava, cutflower, and coffee

production, communal piggery, aquaculture, poultry, and cattle and goat dairying ventures.

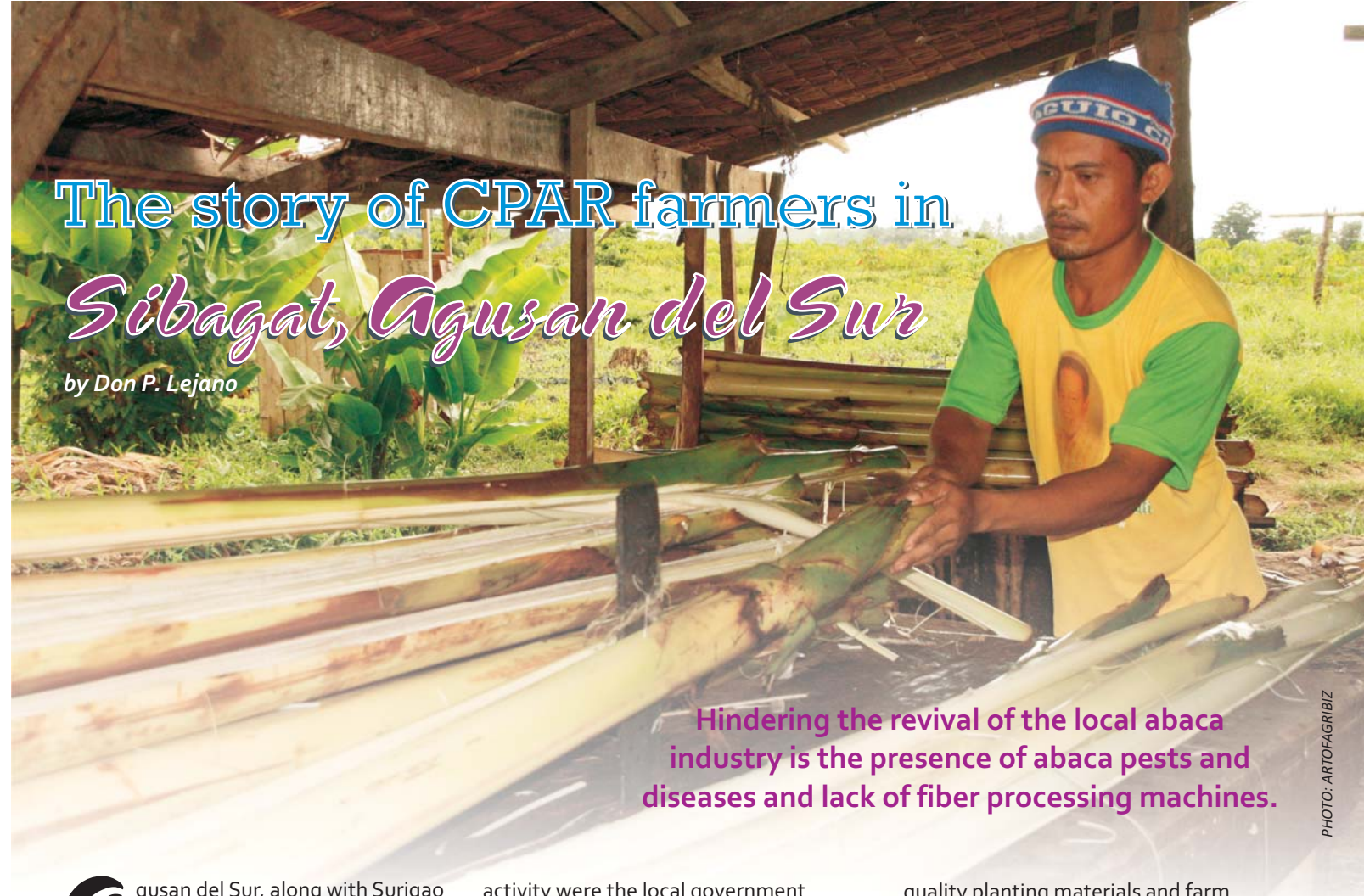
Thus, this rural improvement club is not just the Mother of Hope in name, but more importantly, in deed.

This article is lifted from the book, "The Art of Agribusiness: 111 and More Success Stories in Agri-Entrepreneurship" launched in November 2009. The book was produced through the Bureau of Agricultural Research and the Department of Agriculture. The book made it to the Top Ten Bestsellers Non-Fiction Category in National Book Store. Grab a copy now and be inspired to be your own boss!



The story of CPAR farmers in Sibagat, Agusan del Sur

by Don P. Lejano



Hindering the revival of the local abaca industry is the presence of abaca pests and diseases and lack of fiber processing machines.

PHOTO: ARTOFAGRIBIZ

Agusan del Sur, along with Surigao del Norte, was declared the first priority province for development by the Department of Agriculture-Regional Field Unit (DA-RFU) CARAGA due to its high incidence of malnutrition and poverty. This declaration came out after the 2006 Social Weather Station (SWS) survey identified the poorest provinces in the country.

Wanting to address the pressing agricultural development of the province, the DA-CARAGA Integrated Agricultural Research Center (DA-CARIARC), together with the Bureau of Agricultural Research (BAR), implemented a Community-based Participatory Action Research (CPAR) in three locations in Sibagat, Agusan del Sur from 2007 to date.

A Participatory Rural Appraisal (PRA) was conducted at the beginning of the project which was attended by the CPAR beneficiaries from the three identified barangays in Sibagat – Afga, El Rio, and Mahayhay. Also present in this

activity were the local government officials of the province of Agusan del Sur and the municipality of Sibagat.

Barangay Afga has a sloping topography of land suitable for abaca production. But due to the bunchy top infestation many years ago, hectareage allotted to abaca plantation has gone down to only 7.21 hectares. Hindering the revival of the local abaca industry is the presence of abaca pests and diseases and lack of fiber processing machines.

Barangay El Rio has a similar problem with Barangay Afga. Some 20 years ago, big tracts of land were devoted to abaca production but due to the widespread infection by the abaca bunchy top virus (which also attacks banana and other Musa species), the hectareage is now down to only 15.27 hectares. Aside from abaca, banana and ginger have been two other dominant crops grown in the area. However, several problems were identified which hinder their production such as the prevalence of pests and diseases, lack of

quality planting materials and farm inputs, low market price of ginger, and sources of livelihood for women.

Meanwhile, Barangay Mahayhay comparatively, has a larger hectareage for banana production which is 30.76 hectares and two hectares are allotted for ginger. But just like the other two barangays, bugtok and bunchy top diseases seem to have been the prime hindrances for production. Add to this is the lack of quality planting materials due to the lack of financing, low market prices, and the *ningas cogon* attitude of the farmers.

Now that the problems have already been identified, the project proceeded with the selection of the farmer cooperators to be involved in this undertaking. In the three barangays, a total of 45 farmers were selected. Evaluation of potential techno-demo sites was done soon thereafter, alongside with soil collection samples which were analyzed at the Butuan Soils and Diagnostic Laboratory in Taguibo, Butuan City.

Based on the identified training needs of the farmers during the conduct of PRA, a series of training and seminars were held upon the operationalization of the project. Among the topics discussed were cultural management of abaca, cultural management of banana, ginger technology, natural farming system, and vermiculture composting.

Sibagat.

Along with the implementation of this CPAR project is the creation of farmers' associations. Afga, El Rio, and Mahayhay had their sets of officers and members and are now preparing the necessary documents for them to become a full-fledged cooperative.

The conduct of this project was not at all easy. Several problems were encountered along the way like the erratic weather conditions, the tenurial status of the farmer-cooperators, and their ningas cogon attitude. To respond to these issues, the CPAR implementers researched on

different crop mixes suited to the current agro-climatic condition; drafted a memorandum of agreement (MOA) with land owners on land use agreements to minimize the fast turnover of farmer-cooperators who are tenants, and; conducted a focused group discussion (FGD) about the benefits that the farmers will be getting from the project in the long run.

"Among the major problems met, the '*ningas cogon* attitude' of the inhabitants of Sibagat, Agusan del Sur is the most difficult to handle. They seemed to see the negative side of any development project first before they realize its positive contribution to their lives," said Wilfreda Maslog. "As of this date, only 23 out of 45 farmers remained active in CPAR. The remaining went back to their usual logging activities. It is their wives who were left to do the of the technology demonstration projects."

But even though there has been a decrease in the number of farmer-

cooperators, the project proponents still continues to sustain the interest of the remaining farmers who do bi-monthly monitoring of their techno-demo projects and fast tracking the operation of their vermiculture project.

"The farmer-cooperators are hopeful to harvest quality vermicast – an organic fertilizer out of vermiculture not just for application to their ongoing technodemo projects but also helps them augment their income. The price of vermicast is P300 per 40 kilo bag while vermin (earth worms) cost P350-500/kg. A field trip is also scheduled this third quarter of 2010 to Valencia, Bukidnon where vermiculture raised by one community is very successful. A 3-day farmer-cooperators training on Farm Record Keeping, Transparency and Team Building is scheduled to be conducted in March, 2010. "We are hopeful that in our own little way we can influence the conversion of their negative attitude into a positive one," added Ms. Maslog.

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PHOTO: ARTOFAGRIBIZ

PHOTO: ARTOFAGRIBIZ

Technical persons from DA- CARIARC and the Fiber Industry Development Authority (FIDA) served as resource speakers in the seminars. Later on, an Enterprise Development Training was conducted for the farmers by the project proponent and CARIARC Manager Wilfreda M. Maslog.

Part of this CPAR project is the distribution of planting materials, and organic and inorganic fertilizers to the 45 farmer-cooperators. The three barangays received abaca corms, tissue cultured cardava banana plantlets, ginger, organic and inorganic fertilizers. Allocation was based on the size of the land that they are assigned to the project.

Farmers who had undergone training in natural farming technology system started to formulate fertilizers for their own use. Through the planting materials and fertilizers that were distributed to the farmers, techno-demo farms were established in each of the three participating barangays in

CPAR is a proven effective tool in identifying the community's most pressing problems and finding out appropriate solutions to the main constraints that affect farmers' productivity and profitability.

Among the constraints to development identified in the area were: inadequate infrastructures to support vegetable production such as farm-to-market roads and irrigation facilities resulting to high costs of hauling and trucking services; lack of knowledge on proper application of farm inputs; low price of farm produce due to over-supply, price instability and low quality of farm produce.

The project, led by Cora Alolino Dumayaca of the Department of Agriculture, Northern Mindanao Agricultural Research Center (DA-NOMIARC), aims to improve the productivity and profitability of vegetables to ensure sustainable agricultural production in Impasug-ong, Bukidnon. It also aims to strengthen institutional linkages with the local government unit (LGU), non-government organizations (NGO), government agencies, and other relevant stakeholders, as well as to enhance and empower agricultural communities.

Through the program, technology options and strategies were introduced to the community that would increase vegetable productivity. To address the problem of low prices of vegetables - crop diversification was established,



PHOTO: ARTOFAGRIBIZ

considering the market preference of the area. Component technologies such as organic + (plus) inorganic fertilizer application (balanced fertilization), use of appropriate and improved crop varieties, integrated nutrient management (INM), integrated pest management (IPM), and other cultural management practices were implemented.

On the other hand, the project integrates small ruminant production (swine and goat) to maximize land utilization and, income, and ensure affordable meat for the family and in the community as well. Improved breeds of swine and goats were used while semi-intensive system of feeding (grazing and cut-and-carry) for goats in improved pasture grasses and legumes were implemented.

Since CPAR is community-based in nature, involving farmers in project planning, implementation, monitoring, and evaluation is a significant approach that encourages increased learning and skills development of the community.

Knowledge building or human resource development is taken as complementary to improving farmers' productivity. Thus, the project invests in educating the farmers on the basic strategies/interventions, equipping them with necessary knowledge needed in the implementation of the project.

Among the trainings the project provided were; training on integrated pest management, vegetable production technology, integrated nutrient management, organic farming, forage and pasture management, animal health and values re-orientation. Likewise, as the project continues, other training modules are scheduled to be conducted this March and April 2010.



PHOTO: ARTOFAGRIBIZ

As the international organizations aim to conserve and protect the indigenous vegetables of the ASEAN countries so is, BAR doing it for the country through its banner program – CPAR. This program is already improving the lives of farmers by providing them appropriate knowledge to maximize yield, not only to produce safe and healthy vegetables, but also as a stable source of livelihood.

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CPAR on vegetable-based farming reaps benefits in Bukidnon

by Edmon B. Agron

Vegetables are an important component of our everyday diet. It contains almost all the food nutrients needed by the body. In fact, the food pyramid suggests that every Filipino should consume at least 3-5 servings of vegetables each day.

According to the ASEAN-AVRDC Regional Network on Vegetables Research and Development (AARNET), vegetables can play a significant role in addressing three major factors affecting the quality of life of the resource-poor households in the ASEAN region (Association of Southeast Asian Nation), namely: low income, malnutrition or poor health, and the loss of biodiversity.

As we continue to advance and modernize, the trend is toward further neglect of the importance of vegetables. The danger of loss of biodiversity, in tandem with the loss of opportunities for the rural poor farmers to contribute to the health and well-being of the nation, is that this deprives Filipinos of a food resource critical to national well-being.

The reason behind this problem is the paucity of opportunities to educate rural farmers about the rich biodiversity and appreciation of traditional knowledge so that these farmers can become partners in development and not just mere recipients of the "modern" technology.

AARNET said that, vegetables have been the main source of food for generations in all ASEAN countries. As such, it is realized that protecting and

Vegetables can play a significant role in addressing three major factors affecting the quality of life of the resource-poor households in the ASEAN region, namely, low income, malnutrition or poor health, and the loss of biodiversity.

conserving this rich source of nutrients will ensure ample supply of safe and healthy food for all ASEAN generations.

In line with this, the Bureau of Agricultural Research (BAR) of the Department of Agriculture in the Philippines is working at the community level to improve vegetable farming systems through one of its banner programs – Community-based Participatory Action Research (CPAR).

One illustration of this is the CPAR project in Northern Mindanao titled, "Community-based Participatory Action Research on Vegetable-based Farming System in Impasug-ong, Bukidnon".

Northern Mindanao is among the major vegetable growing areas in the Philippines, it accounts for 6 percent of the country's vegetable production with approximately 600,000 hectares of land devoted to it. However based on the results of a rapid rural appraisal (RRA), the productivity and profitability of vegetable growers in this area are very low.

Lanao del Norte finds PEACE

by Ma. Eloisa E. Hernandez



One way of characterizing peace is the existence of harmonious relationship among people within a healthy environment. However, peace also has a different meaning for the province of Lanao del Norte.

Three barangays (Pange, Princesa, and Upper Sagadan) of Baroy, Lanao del Norte became the recipients of the Productivity Enhancement in Agriculture through Community Empowerment (PEACE) Project.

Lanao del Norte is reported to be one of the 10 poorest provinces in the Philippines. It ranked 5th, 7th, and 6th in terms of income gap, poverty gap and severity of poverty, respectively according to the NSCB 2007 reports.

Department of Agriculture-Regional Field Unit 10 (DA-RFU 10) and the Bureau of Agricultural Research (BAR) through the Northern Mindanao Integrated Agricultural Research Center (NOMIARC) designed a project to address the sad situation and to alleviate poverty in Lanao del Norte. The response identified to improve agricultural productivity and

profitability is the implementation of the Community-based Participatory Action Research (CPAR) project in the province.

CPAR is an approach and strategy for technology transfer that involves the participation of the community, together with experts and researchers, in identifying the most appropriate technologies that address the community's priority needs.

The ultimate goal is to increase the total farm productivity and income of farmers within the context of a sustainable production system. "CPAR promotes partnership among researchers, community members, and other stakeholders in the process of problem identification, formulation of solutions, planning, implementation, monitoring and evaluation," Cora Dumayaca, project leader, said.

The PEACE project aims to improve productivity, sustainability, profitability and ensures food security through community empowerment guided by the principles of efficient and effective management of resources.

"The project follows the roll-over scheme of the initial cost of inputs to enable other qualified farmers to avail of the said project is assistance. The project intends to gradually rid farmers of the dole out mentality," Ms. Dumayaca explained.

What makes the approach unique, in relation to other existing agriculture projects designed to alleviate hunger and poverty, is its being community-based, according to Dumayaca. The identified farmer-partners have passed

Three barangays (Pange, Princesa, and Upper Sagadan) of Baroy, Lanao del Norte became the recipients of the Productivity Enhancement in Agriculture through Community Empowerment (PEACE) Project.

through screening by the local government units (LGU) counterparts following a set of criteria which include the farmers' willingness to cooperate in the process of project implementation, payment of the cost of inputs at harvest, participation in a counterparting-scheme for the land area and labor requirements for the project, and willingness to share knowledge learned with other farmer-partners.

Project implementation

A series of Focus Group Discussions (FGDs) were held to facilitate the formulation of a sound agricultural development plan. The community development plan (CDP) was then presented and validated with the LGU executives.

Poverty and low farm income surfaced as the peoples' major problems. This can be attributed to the low farm productivity brought about by the non-application of required inputs due to lack of capital, no access to capital or high cost of inputs, lack of knowledge on appropriate farm technologies and low soil fertility. Individual behaviors and social circumstances also contributed to their being financially-deprived, Dumayaca explained.

Prior to the introduction of various

component technologies on field, a series of training activities was conducted to equip farmer cooperatives (FCs) with the required knowledge essential to successful project implementation. These trainings focused on crops and livestock production and management. These included crop production technologies/farming systems, integrated pest management (IPM), integrated nutrient management (INM), soil conservation techniques, forage and pasture management, animal health, and farm budgeting and recording.

Initially, improved breeds of one goat, one buck, and five does and weaned piglets for each barangay were distributed.

Impacts of the project

The project has initially provided farm inputs, livestock, technical assistance and technology interventions to 42 farmer-cooperators



PHOTO: ARTOFAGRIBIZ

coconut trees) and certified seeds (inbred) of rice and combination of organic and inorganic fertilizers.

Average yield of corn ranged from 995 kgs to 2700 kgs across seasons in the three sites. This yield level is significantly higher compared to the baseline yield of 900 kgs.

Rice yield ranged from 2600 kgs to 3080 kgs (fresh weight) which was higher compared to the baseline yield of 1750 kgs (fresh weight).

The PEACE project in the barangays has created the desired impacts in the lives of the farmers, and, hence, the community. Corn farmers' net income ranged from PhP1,500.00 to PhP17,000.00 while rice farmers income from PhP9,000.00 to PhP13,000.00. "This income level is significantly higher compared with before the project," Dumayaca said.

The project has intensified its livestock integration component, through an animal dispersal program for goat and swine. This enabled the poor farmer-beneficiaries to venture into animal raising and marketing as their additional means of livelihood to raise additional family income.

Collaborative partnerships

The LGU of Baroy greatly contributed to the effective implementation of the project specifically in the feed-backing system. "Strong partnership developed among DA, LGU and community members as

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MILKING PROFIT FROM DAIRY FARMING

through
CPAR on
processing feeds

Story and photos by Rita T. dela Cruz



Dairy farming is a profitable industry. In Brgy. Tacunan, majority of the household population are into dairy cow raising. But with the increasing cost of commercial feeds, many dairy farmers have shied away from engaging further in this business. In dairy farming, feeding system is crucial. The kind of feeds given to the cattle highly determines the amount and quality of milk that they produce. Commercial feeds are still the best choice, but they are expensive.

Given this problem, the Bureau of Agricultural Research (BAR) of the Department of Agriculture (DA) funded a Community-based Participatory Action Research (CPAR) project on "Dairy Cow Feeds Processing" in Brgy. Tacunan, Tugbok District, Davao City.

The project is being implemented in coordination with the DA-Southern Mindanao Integrated Agricultural Research Center (DA-SMIARC) and the

local government unit of Tugbok District.

One of the beneficiaries of the CPAR project is the Tacunan Dairy Farmers Cooperative (TADAFCO), a cooperative whose farmer-members are mainly into milk production from dairy animals which were dispersed through a loan granted by the National Dairy Authority (NDA). With an original 22 dairy farmer-members, it operated in 2003 with 11 dairy cows distributed to four farmer-cooperators. This started as initial investment of the cooperative.

Specifically, the CPAR project aims to address the problem on expensive commercial feeds by providing the TADAFCO farmer-members quality but affordable feeds for their lactating cows. By formulating their own feeds, the cooperative can also sell them to non-members in relatively cheaper price hence, providing additional source of income for the farmer-members.

"As part of the project intervention,

TADAFCO farmer-members underwent a 40-hour training and seminar on feed mixing and formulation conducted by the Technical Education and Skills Development Authority (TESDA)," said Myrna S. Cantilla, SMIARC senior agriculturist and CPAR project leader.

Cantilla explained that in feed formulation, crude protein (CP) is an essential consideration. Crude protein estimates the total protein content of feeds and usually, the higher the CP content in commercial feeds, the more

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By formulating their own feeds, the cooperative can also sell them to non-members in relatively cheaper price



PHOTO: MAQUINO

CPAR in Agusan...from page 18

project is the dispersal program of piglets for fattening and the distribution of formulated feeds. This is part of the project's objective which is to produce low cost feeds for swine and poultry production.

Through this program, the local government of Sta. Josefa provided piglets to farmer members of Livestock and Poultry Raisers Association (LAPRA) with feeds (from starter mash to finisher mash), not only to provide additional income, but also to test the efficiency of the feeds that were formulated.

Traditionally, swine growers in Sta. Josefa were highly dependent on indigenous feedstuff such as "darak",

"kangkong" and gabi as sources of feeds for their animals which are not efficient inputs for the pigs to quickly reach their marketable weight.

During the duration of the project, it was found that traditionally-grown pigs produced thick fat while the meat grown with the formulated feeds produced lean fat and thicker meat parts.

The favorable result of the project opened a wide market for feeds which consequently increased the demand for feeds produced from the feed mill established in the community.

Collaboration for rural development

One of the attributed factors for the success of this CPAR project is the strong and effective collaboration between and

among the agencies involved, namely: DA-BAR, DA-RFU 13/CARIARC, LGU of Sta. Josefa and the farmers' association.

The project was implemented based on a resource sharing scheme with BAR providing the funds with counterpart from the local government of Sta. Josefa. Meanwhile, CARIARC provided the technical assistance, implementation, monitoring, data gathering and project management, with the farmer cooperators providing the land and labor for corn and swine production.

The CARIARC procured the needed equipment through funding support from BAR while the establishment of the equipment shed was taken care of by the LGU- Sta. Josefa. As part of the counterpart funding, DA-RFU 13 provided

Saranggani is a province blessed with natural riches. It has wide stretches of fertile lands characterized by flatlands, rolling hills and mountains. Its marine resources include a long coastline and vast water areas that contain magnificent coral reefs, sea grasses, mangroves, and the diversity of fishes.

The lush mountains of the province hold many of nature's wonderful creatures. From its bosom flows the purest freshwater resources and pristine waterfalls settled only by a small number of its native dwellers and ventured into by a few daring adventurers.

Saranggani is a province of unmatched beauty and natural resources that have yet to be discovered.

The province is dependent on agriculture. Majority of the inhabitants are farmers. Its major agricultural activities are crop production, livestock production, and fisheries. Coconut is the

primary commodity followed by corn, rice, and cotton. Farmers also grow banana, root crops, vegetables, fruits, abaca, coffee, and rubber.

However, despite these natural resources, it was identified as one of the 10 poorest provinces in the country. This prompted the Bureau of Agricultural Research (DA-BAR) through the Central Mindanao Integrated Agricultural Research Center (CEMIARC) to implement a countryside development project through DA-BAR's banner program on community-based participatory action research (CPAR).

A project entitled "Enhancing Countryside Development through Community-based Participatory Action Research (CPAR) in the Province of Saranggani. This was implemented in the identified poorest cluster barangays of Malapatan Saranggani, Lun Padiu, Lun Masla, and Brgy. Patag.

Planting the seeds of change

Based on the results of the rapid rural appraisal (RRA), production in

these barangays is very low – resulting to low income of the community. Among the major issues/problems identified were lack of financial capability to sustain their farms, low price of farm produce, lack of post harvest facilities, lack of technological information, use of traditional varieties as planting materials, high cost of farm inputs as well as environment related or biotic problems like soil erosion and long dry months in the province. The migratory attitude of farmers also affects the agricultural output of these barangays.

To address these problems, the project introduced technology options and strategies that would help increase agricultural productivity and income in the community. Farmers were taught the importance of crop diversification, poultry and livestock production, use of appropriate and improved varieties, applying organic fertilizers, implementing Integrated Nutrient Management (INM) and Integrated Pest Management (IPM), and other cultural management practices.

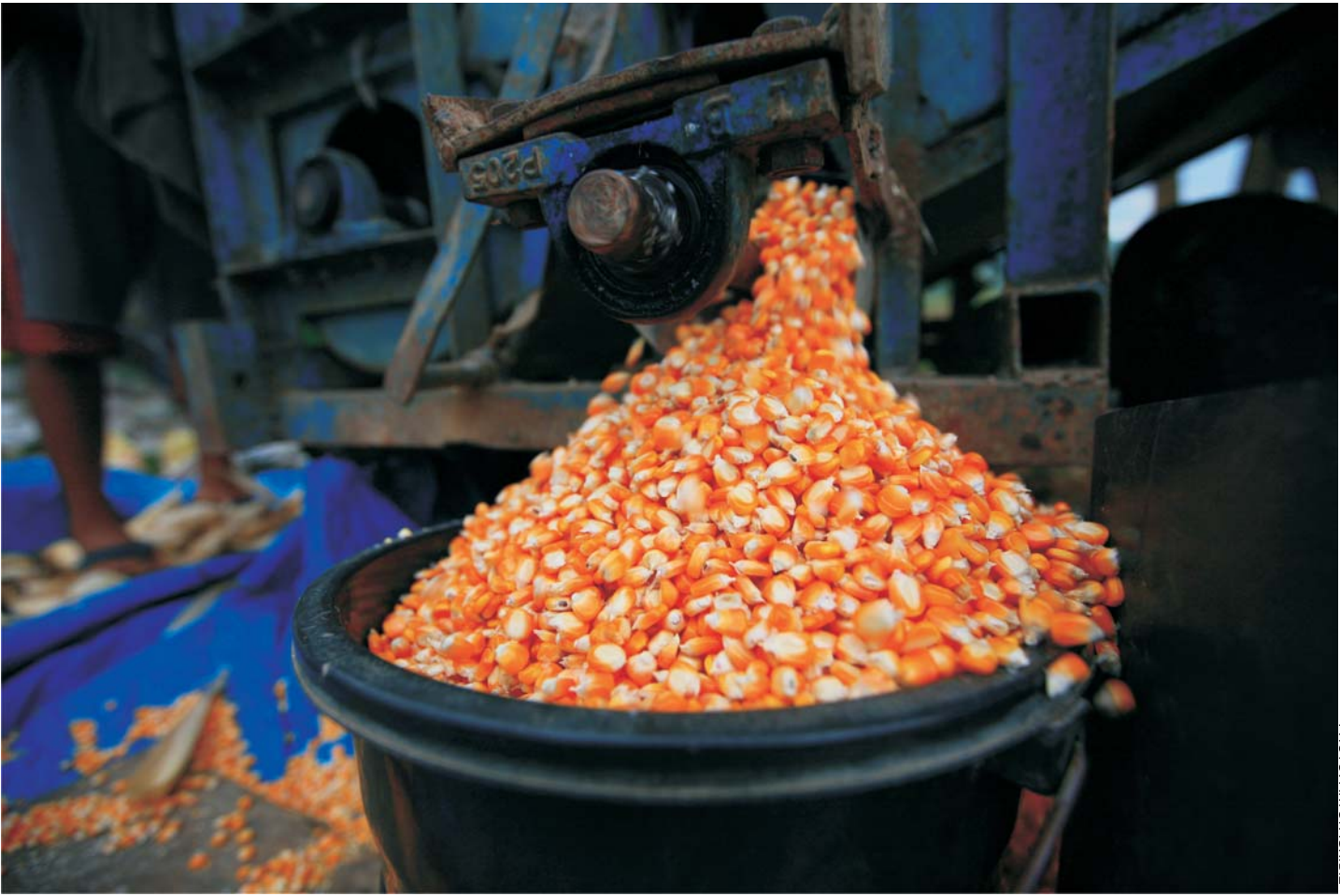


PHOTO: ARTORAGRIBIZ

CPAR comes to Saranggani

by Edmon B. Agron



PHOTO: CEMIARC

As a project strategy, three technology modules were introduced for the different agro-ecological zones in the community. The modules were: corn production integrated with banana and goat production (corn + banana + goat) for plain corn areas; corn with banana and goat production under coconut (coconut + corn + banana + goat) for areas with existing coconut plantations; while on rolling (hilly) areas, the first module (corn + banana + goat) was used. Contour farming systems were implemented to minimize erosion during rainy season.

Due to long dry months in the region, planting cash crops is not possible. However, the strategy of integrating other crops is very important to address the immediate need of the community. For instance, the integration of banana with corn and coconut production served as food support, if not as an alternative, during long dry spells, while goat production served as additional source of income.

Improved local corn varieties, such as *Calimpus*, *Tiniguib*, and *Bataan*, were used as planting materials. Each farmer cooperator was provided with 200 pieces of tissue cultured banana plantlets (cardava) and one upgraded, ready-to-breed doe for the livestock component of the project.

A series of trainings was also conducted on corn production technologies, soil and water conservation, value orientation, banana production, goat production, and vermi-composting. The strategies used included the farmers' field school (FFS) to guide farmer cooperators in the total production management of corn (from land preparation to harvesting).

FFS is a group-based learning process designed to showcase the A-Z techniques and technologies in corn production. It was conducted in CPAR sites once a week, allowing farmers to interact and learn from each other. Since FFS is conducted in the fields, actual conditions were identified, and real

problems were observed and analyzed. With these, farmers gained the necessary knowledge and skills that enabled them to manage their own farm resources more and make appropriate decisions.

Aside from agriculture management related trainings, the project also gave training on handicraft-making using corn husks – a by-product from corn that is usually disposed of by farmers. Housewives, including children, were trained to make corn husk twine, dolls (of different sizes), coin purses, bags and flowers, and sell the product to the National Corn Husk Crafters of the Philippines, an organized group promoting corn husks as an alternative source of income. Food-based technology training on corn, coffee, banana chips, banana pastillas, banana shake, and coco-sugar sap making were also conducted.

Reaping the gains

Undeniably, with the trainings and the provision of other relevant information to the community by the project, it has created a difference in the lives of the local farmers. Yields in corn production have increased from 1.5 tons to 4 tons per hectare. The

integrated component of the project like coconut, banana, and goat production provided an additional income.

Opportunities to venture in food-based businesses were opened and handicraft-making assured livelihood for housewives and children providing them continuous income.

Farmers became self-sufficient in producing their own organic fertilizers through vermicomposting. While increasing the yield and quality of corn, banana and other vegetables, the use of organic fertilizers prevented detrimental effects of inorganic fertilizer usage. The good thing is that, these barangays have passed a resolution obliging their farmers to make their own vermin bed for vermi-composting. The practice has improved their agricultural productivity and saved them money from avoiding the use of expensive commercial fertilizers.

The project encouraged the creation of an association named Malapatan Integrated Farmers' Association which focused on providing technical assistance to farmer members. It also serves as the market monitoring facility of the farmers and

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PHOTO: CEMIARC

CPAR in Agusan..

feed ingredients for the 100 heads experimental animals to test the efficiency of the feeds formulated during the duration of the CPAR project. Other inputs such as the hybrid yellow corn seeds, fertilizers and other production inputs were provided by the MLGU Sta. Josefa.

Farmer-cooperators for the project were members of LAPRA. As cooperators, the members attended trainings and cross visits to enhance their knowledge and skills particularly on corn production, livestock production and management, and feed formulation. Feed mill operators were trained on the different mixing techniques and processes in order to equip them with the proper knowledge on the operation. Computerized feed formulation and follow-through training on basic computer operations were also conducted to fully equip the feed millers with the needed skills.

This article was based on a study titled, "Community-based Participatory Action Research (CPAR) in Sta. Josefa: LGU-RIARC Collaboration for Rural Development" by Escolastico S. Cagatin, DVM of DA-CARAGA Integrated Agricultural Research Center, DA-RFU XIII, Trento, Agusan del Sur.

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PHOTO: DA-RFU 12

CPAR Sarangani...from page 14

linking farmers with corn buyers from neighboring cities for possible market contracts.

The project also became a medium for the different government and non-government organizations to unite and work together for the noble purpose of uplifting the lives of the people in Malapatan Sarangani.

The success of the project was due to the collaborative effort of the local government units (barangay, municipal and provincial government), DA-Regional Field Unit, the DA-Ginintuang Masaganang Ani (GMA) program, CEMIARC, and BAR. Expertise and technical assistance from Mindanao State University (MSU) in General Santos City, Agricultural Training Institute (ATI), and Philippine Coconut Authority (PCA) also provided help in the success of the project.

According to Jocelyn Torres, CPAR project leader, the project created a good environment for learning and, eventually, for earning money. In an interview, she also emphasized, that the project has created opportunities to increase the farmers' income, its sustainability, however, will depend on them (farmers). She related two stories of community development projects, that when the project ended, the good things that the project created (practices/techniques as well as the livelihood programs) were neglected. The continuous support of the LGU is all important, but personal motivation and discipline among farmers are indispensable in the sustained development of community and country.

This article was based on the project titled, "Enhancing Countryside Development through Community-based Participatory Action Research in the Province of Sarangani" implemented of the Department of Agriculture Central Mindanao Integrated Agricultural Research Center (DA-CEMIARC).

Aside from agriculture management related trainings, the project also gave training on handicraft-making using corn husks – a by-product from corn that is usually disposed of by farmers.

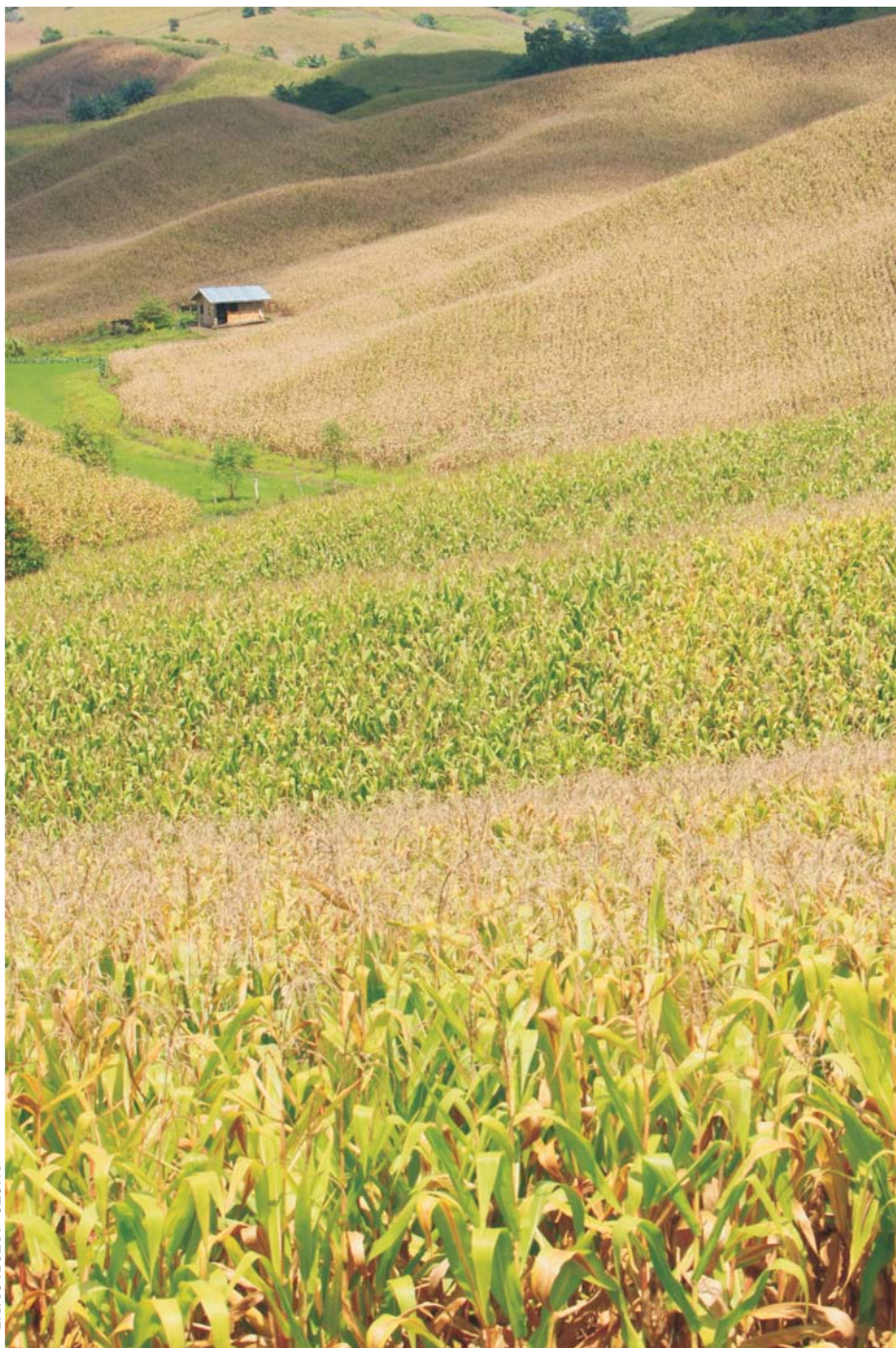


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(mt) corn surplus.

Given the prevailing surplus of corn in the municipality, an establishment of a village level feed mill was proposed to process corn surplus and to utilize locally available feed ingredients in the area. Also, with the implementation of CPAR, the feedmill was made operational to use the locally-produced corn and in return, support small poultry and swine raisers in the community by making available to them low-cost feeds.

Buy-back scheme

Ensuring corn production is one thing, marketing the produce is another thing. Marketing the farmers' produce became a problem given the variability of the farm gate price of corn. During the wet season, farm gate price of corn could not compensate farmers' production resulting to break even or even a big deficit for farmers. Hence, the local government of Sta. Josefa facilitated a marketing strategy known as the "Buy-back Scheme" which aims to provide stable corn prices for the farmers. Through this scheme, the price of corn was stabilized giving an assured equitable income to corn farmers.

Following this scheme, farmers' harvests are sold solely to the LGU that in return will market the product outside the municipality, either to the National Food Authority (NFA) or to other big corn dealers. The LGU stocked a portion of corn from the farmers' deliveries for their feed mill operations.

All inputs were guaranteed by the LGU-Sta. Josefa. It negotiated contracts with agricultural supplies provider for the inputs to be lent to the farmers who will give payment for the availed inputs at the end of the cropping season.

In the contract, the farmer would estimate his expected yield based on the stand of his corn and his expected harvest date. The farmer's responsibility is to deliver his product to the LGU for estimation and appraisal for him to get his payment for his product.

Dispersal program of piglets

Another important component of this CPAR

The local government of Sta. Josefa facilitated a marketing strategy known as the "Buy-back Scheme" which aims to provide stable corn prices for the farmers. Through this scheme, the price of corn was stabilized giving an assured equitable income to corn farmers.

CPAR in Agusan del Sur: A life-changing venture for yellow corn farmers

by Rita T. dela Cruz

A successfully-implemented project is gauged not only by the goals and objectives that it achieved but, more importantly, it is also measured by how its spirit continued on to sustain what it started even after the project had already ended.

In the case of Sta. Josefa in Agusan del Sur, all it needed was the right project to come along and the appropriate agencies and people to come together to work towards one goal: improve the quality of living of corn farmers in the area by increasing their income and profits.

Establishing a CPAR on corn

A landlocked province in the Caraga Region and the third largest province in the Philippines, Agusan del Sur's people live by planting rice, corn, and banana which are their main sources of food and livelihood.

The province has vast untapped fertile agricultural lands which are suited for corn production. Out of its 415,102 ha of agricultural area, its prime corn land has a potential production of 21,539 metric tons per cropping season which can be realized with the proper package of technology on corn production.

In the municipality of Sta Josefa, white corn production has been much favored until 1998. In 1999, farmers shifted to yellow corn after various government initiatives promoting yellow corn production poured to the

area. One government program is the Total Agricultural Production Development (TOPD) Ordinance which was implemented to finance yellow corn production. At the time, the Department of Agriculture (DA) also provided 100 bags of yellow corn under the program, Plant Now Pay Later (PNPL).

While the yellow corn production increased in the area, other aspects of the value chain remained unresolved. How will the farmers market their produce given the unstable farm gate price of corn? What are the appropriate technologies available on corn-based farming system? How to ensure an increase in farmers' income?

These issues were addressed when a Community-based Participatory Action Research (CPAR) project was established in Sta. Josefa. With funding

support from the Bureau of Agricultural Research (BAR), the project was conceptualized through the CARAGA Integrated Agricultural Research Center (CARIARC) in collaboration with the Provincial Veterinary Office- Agusan del Sur and DA-RFUXIII- Regulatory Division as collaborating agencies.

Specifically, the CPAR project aimed to 1) enhance the basic knowledge and skills of the project beneficiaries on corn-based farming system, feed formulation and feed milling operation; 2) produce quality and readily available feeds at a reasonable price; and 3) provide income for the corn farmers and their families.

Feed milling operation

From 2001 to 2007, Agusan del Sur is said to have produced 39,000-52,000 mt of corn (yellow and white) with an average of 29,000-44,000 metric tons



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Money-earning livelihood: Tiblawan farmers earn through mango production

Story by Rita T. dela Cruz

Farmers from Brgy. Tiblawan in Governor Genoroso, Davao Oriental found means to improve their economic conditions and to contribute in the production of Carabao mangoes in Region 11. Planting mangoes offers a bright future for the farmers and the community in Tiblawan because as the mango trees grow older, they produce more and better quality fruits resulting to high income.

This was made possible through a Community-based Participatory Action Research (CPAR) on Mango Production funded by the Bureau of Agricultural Research (BAR) and implemented by the Southern Mindanao Integrated Agricultural Research (SMIARC) in cooperation with the Municipal Local Government Unit (MLGU) of Sta. Maria.

An export variety, Carabao mangoes (*Mangifera indica* L.) are native to the Philippines and are known worldwide for the quality of its taste and distinct sweetness. But as good as it is, Carabao mangoes are also the most complex fruit crop to cultivate. Hence, at least 20-30 percent of farmers who venture in Carabao mango farming are not able to get their investments back. One of the reasons is due to the lack of know-how on proper cultivation and management. This was specifically addressed through the CPAR on mango production.

CPAR on mango production

Tiblawan, Gov. Generoso is mainly composed of marginalized farming communities whose lands, although arable, are idle and planted mainly for corn. The community's primary source of income is the produce/harvest from the land area that was granted to them which they augment by trying to earn a living from fishing and occasional employment from nearby coconut farmers.

Since Tiblawan is outside typhoon belt, the soil and climate are favorable for year round cultivation of agricultural crops including corn and fruits. The CPAR project on mango production was initiated in Tiblawan in 2005. Mango planting materials were used to distribute to farmer-cooperators.

One major problem that the farmer-cooperators encountered during the implementation was the lack of capital for induction. To address the problem, a multi-disciplinary team of researchers from SMIARC conducted consultations and meetings with the municipal barangay officials (i.e. mayor, MAO, ag technicians) on the approaches and implementing strategies to take.

To better equip the CPAR farmer-cooperators on mango production, researchers and technicians from the local and municipal levels conducted

actual technology demonstration on pruning technique, fertilization, flower induction, and fruit bagging.

As cooperators of the project, farmers were provided flower inducers, chemicals, and a Package of Technology (PoT) on mango production. The project provides Carabao grafted mango seedlings and technical assistance. To sustain the project, farmers would have to pay them back once they are established in selling their harvests.

"Now that the project has been turned over to the local government, we the agricultural technicians continue to monitor the project. We continue to provide technical assistance on the proper cultivation and management of mangoes to our farmers," said Porferio Valles, agricultural technicians.

Successful farmer-cooperator

During the onset of the CPAR project, there are four farmer-cooperators; one of the most successful of them is Adelito Caballes.

He narrated: "Before, I used to plant nothing but corn and the income is not that good. I hardly get enough for our daily needs until CPAR came to Tiblawan and I became a farmer-cooperator. They gave us planting materials to start with and now, the

actual technology demonstration on pruning technique, fertilization, flower induction, and fruit bagging.

Carabao mangoes are also the most complex fruit crop to cultivate. Hence, at least 20-30 percent of farmers who venture in Carabao mango farming are not able to get their investments back. One of the reasons is due to the lack of know-how on proper cultivation and management.

mango trees are now bearing the fruit that's providing me a good income for me and my family."

Mang Adelito's hardwork paid off when his long-wait reaped sweet success. His harvest earned him P131,000 from the 20,000 kilos of mango that he harvested from his three-fourth hectare of land. Soon his coco-lumber house was renovated with concrete

house and he was able to send his children to school.

To provide additional income, chicken, sheep and goats were also raised under the mango trees. SMIARC provided Mang Adelito a small herd of sheep to graze and to weed his now growing mango farm.

With the success of the CPAR project on mango production, farmer-members of the Tiblawan Fisherfolk and Farmers Multi-Purpose Cooperative (TIFFARMCO) found ways to contribute to the high demand for mangoes. Today, the coop has 135 farmer-members, 77 of which are CPAR cooperators.

Reference: *The Irony of the Carabao Mango Industry in the Philippines* from: <http://blog.agriculture.ph/tag/the-irony-of-the-carabao-mango-industry-in-the-philippines>

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PHOTOS: RDELACRUZ

CPAR farmer-cooperator
Adelito Caballes

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