FUTURE RICE PROGRAM
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FUTURERICE PROGRAM

Program Leader: Roger F. Barroga

I. Knowledge Management of CGPS4CSR Technologies

RF Barroga

This project is the first of its kind. It basically aims to collect information on the application of Clean GPS technologies including farm innovations on natural farming practices to advanced tools and techniques. It also includes collection of success stories on agritourism and agripreneurship ventures in the Philippines to serve as inspiration to rice stakeholders especially to the younger generation of rice farmers. Its main strategy is to conduct farm visitations, interviews, photo documentation and feature writing.

Scanning, Collection, and Database of CGPS4CSR

WH Hernandez, RF Barroga

The main purpose of this study is to gather smart farming solutions for future farming scenarios. It embraces the strategies of linking with other government agencies and corporations with similar advocacies, researching through farm visitations and interviews with successful local agritourism and agripreneurship icons as well as online research of natural to advanced farming innovations – from such data gathering, the team created a database of smart farming practices as well as a book encapsulating relevant information and stories which will primarily serve as an informative and motivational tool for rice stakeholders.

Highlights:

- In pursuit of its advocacy of gathering smart solutions for future farming scenarios, the FutureRice Program have conducted nine (9) local farm visitations. The farm visits included ocular exposure to Clean GPS technologies, lecture on the establishment and practice of smart farming innovations as well as interview with key people who are involved in farm management.

- Costales Nature Farms is a 5-hectare land situated in Majayjay, Laguna which primarily showcases organic farming practices in vegetable production and livestock. It offers farm tour packages and trainings and it also distributes organic products locally.
b. Herbana Farms is a 4-hectare ecological and organic farm located in Calamba Laguna which specializes in the production of organic salad greens, organic pigs, free-range chickens, and tilapia aquaculture. It is owned and managed by Mr. Gil Carandang, a Fulbright scholar and mentor in organic and biodynamic farming.

c. Mangarita Organic farm in Capas, Tarlac, is a community initiative of Sibol ng Agham at Teknolohiya, Inc. (Sibol), a non-government organization that promotes the use of renewable and sustainable energy. In this farm, crop and animal integration technologies are showcased to highlight the economic and ecological nature of sustainable agriculture.

d. Gourmet Farms, Inc. is located in Silang, Cavite. They are known for their organic salad greens and herbs. Among their primary farm components are windmill, greenhouse facility and vermiculture.
e. EastWest Permaculture Farm, located in San Ildefonso Bulacan, is one of Asia’s leading vegetable seed company. It sells ready-to-farm hybrid seeds and seedlings in over 60 countries worldwide.

f. Laur Farm, situated in Nueva Ecija, has 4 hectares of rice field. This farm also features diversified farming practices such as vegetable and mushroom production, fruit trees planting, livestock raising and vermicomposting. Laur Farm also offers trainings and hands-on exposure trips. It is known for its productive rice planting using hybrid seeds and panting machines.

g. Duran Farm specializes in vegetable seedlings production like tomatoes, pepper, and eggplant. Their primary service offered is planting seedlings for contract growing. The greenhouse facility is maximized as the seedlings have sure buyers in the market. The 3.6ha farm area houses vegetable production facilities, livestock, dormitories, fishpond, and water impounding system and play seed production.
h. Don Bosco Multi-Purpose Cooperative in Mlang, North Cotabato started its operations from a grant money provided by Don Bosco Foundation. It houses the Bios Dynamis brand in the market, popular for its biodynamic rice, cleansing teas and soap products.

i. ACES Farm in Panabo City, Davao del Norte performs the whole value chain operation in the farm. They do the production, packaging and marketing of the products. They have specialized training program that teaches crop and livestock production including the economic aspects. It houses organic livestock, vermicomposting, lettuce production, organic concoctions, feed pellets, accommodation, training center and product packaging facility.

• Publishing a book on agritourism: “Agritourism Farms in the Philippines”. This book encapsulates the smart farming practices gathered from the farm visits conducted by the FutureRice team in 8 local farms. It aims to serve as an inspirational and informative material for rice stakeholders to encourage them incorporate the Clean GPS practices in their own farm and at the same time venture into other creative
agripreneur and agritourism livelihood opportunities featured herein. The overall goal is to help farmers increase yield through the many available techniques without compromising environmental concerns.

II. Advocacy and Capacity Building

WHernandez

This project aims to promote the FutureRice Program to various rice stakeholders by showcasing natural farming and cost reducing technologies in the farm. It also aims to provide aid to the farmers to avoid the harmful farming practices and at the same time assist them in increasing their yield through the distribution of educational materials and other promotional efforts. This program will also establish links with private corporations with CSR programs related to agriculture to reinforce our initiatives.

Courseware Development for Rice Academy

RFBorroga, WHernandez

This study focuses on creating an inventory of existing technologies of smart and productive rice planting through multi-media documentation. The main purpose of this initiative is to develop a courseware material that offers information on natural farming, mechanization, alternative energy and farm automation to produce a new breed of rice extensionists.

Highlights:

- The FutureRice team conducted nine (9) visits to local smart farms (also see Knowledge Management of CGPS4CSR Technologies) that subscribe to Clean GPS practices. The farm visits included trainings and exposure trips. The information
obtain were documented to later on be used in the development of a courseware material.

• The FutureRice Program also conducted rice transplanting and harvesting activities on January 10 and April 15, 2014 to PhilRice staff and interns to reinforce its advocacy of increasing awareness for smart and sustainable farming practices.

• FutureRice staff Marian Anora and Wendy Hernandez attended training on organic farming; Jose Angat in mushroom production; Jomar Bildua, Sonny Joson, Jose Angat in SRI technology; Jomar Bildua in biogas digester operation.

• FutureRice staff also attended in KEC conference, Science and Technology exhibit and SEARCA Agritourism conference

• To reinforce its rice academy component, the program also established a collaboration with the Project IPaD. The FutureRice farms serves as the rice boot camp of rice extensionist trainees or AgRiDOCs, providing plots for their manual and mechanized rice transplanting and vegetable production. The Project IPaD donated 1 million pesos to the program to be used for the construction of learning sheds and training center.
III. Promotion of CGPS4CSR in farming communities

RF Barroga, WH Hernandez

This study aims to promote the FutureRice Program to rice stakeholders to raise awareness for its primary advocacies on smart and sustainable farming practices. With the advent of the internet, the program will capitalize on this tool to reach its target audience while still using the traditional means of wide-scooped communication which are print materials.

Highlights:

• The program was able to produce billboards, variety labels and other farm site signage and promotional or informative collaterals such as brochures, leaflets, stickers, and cap patches.

• To effectively reach its target audience especially the younger generation of agriculturists or rice stakeholders, FutureRice also established its presence in the social media by creating a Facebook page (Facebook.com/FutureRice), gmail account (TheFutureRiceProgram@gmail.com) and blog (futurerice.blogspot.com).
The FutureRice also invited barangay officials of Maligaya and Mabini to showcase mechanized harvesting equipment during the October field day. The demonstration also included ocular visit in the vermicomposting facility which uses rice straw.

The FutureRice also submitted trade name application to IPO and filed the Declaration of Actual Use.

IV. Creating an ICT solutions catalogue for farm automation

NL Caballong, RF Barroga

Integrating Information and Communication Technology (ICT) in the farming system requires analyzing underlying key concepts by which farming discipline is anchored. Through Soft Systems Methodology (SSM), all possible ICT mechanisms were identified and fitted to appropriate farming domain category (production or management) and vice versa. This brought out an inventory of existing and new ICT product concepts that can suit to certain farming knowledge area (Figure 1). Creating such basis can help not only ICT but also other technologies develop innovations that will bridge gaps to improve farming not just as a production entity but an enterprise, as a whole.
Highlights:

- Existing ICT products available for farmer use: knowledge banks e.g. PinoyRKB-PhilRice; diagnostic applications e.g. MOET-PhilRice, and Crop Nutrient Manager-IRRI,PhilRice; automatic weather logger; expert link text messaging service e.g. PhilRice and ATI.

- Industry-based products that when customized will fit in the farming system: software application development for activity monitoring, enterprise resource management, marketing, and security among others; unmanned aerial vehicle (UAV) for remote sensing, data capture, and mapping; satellite remote sensing; automatic weather station system; text messaging service for market price alerts; e-community centers; social media network platform for agriculture supply chain;

- Developing ICTs ready for agriculture research and product development: sensor systems; global positioning system (GPS); robotics; intelligent systems; telecommunication; image and acoustic analysis; open-source microcontrollers;

- Farm automation will be the unique selling point of the FutureRice program – as it prepares for globalization and knowledge based competition. This catalogue will be the basis for FutureRice’s farm automation projects.

Figure 1. Inventory of farming knowledge areas where ICT can intervene
Abbreviations and acronyms

ABA – Abscisic acid  
Ac – anther culture  
AC – amylose content  
AESA – Agro-ecosystems Analysis  
AEW – agricultural extension workers  
AG – anaerobic germination  
AIS – Agricultural Information System  
ANOVA – analysis of variance  
AON – advance observation nursery  
AT – agricultural technologist  
AYT – advanced yield trial  
BCA – biological control agent  
BLB – bacterial leaf blight  
BLS – bacterial leaf streak  
BPH – brown planthopper  
Bo - boron  
BR – brown rice  
BSWM – Bureau of Soils and Water Management  
Ca - Calcium  
CARP – Comprehensive Agrarian Reform Program  
cav – cavan, usually 50 kg  
CBFM – community-based forestry management  
CLSU – Central Luzon State University  
cm – centimeter  
CMS – cystoplastic male sterile  
CP – protein content  
CRH – carbonized rice hull  
CTRHC – continuous-type rice hull carbonizer  
CT – conventional tillage  
Cu – copper  
DA – Department of Agriculture  
DA-RFU – Department of Agriculture-Regional Field Units  
DAE – days after emergence  
DAS – days after seeding  
DAT – days after transplanting  
DBMS – database management system  
DDTK – disease diagnostic tool kit  
DENR – Department of Environment and Natural Resources  
DH L– double haploid lines  
DRR – drought recovery rate  
DS – dry season  
DSA – diversity and stress adaptation  
DSR – direct seeded rice  
DUST – distinctness, uniformity and stability trial  
DWSR – direct wet-seeded rice  
EGS – early generation screening  
EH – early heading  
EMBI – effective microorganism-based inoculant  
EPI – early panicle initiation  
ET – early tillering  
FAO – Food and Agriculture Organization  
Fe – Iron  
FFA – free fatty acid  
FFP – farmer’s fertilizer practice  
FFS – farmers’ field school  
FGD – focus group discussion  
FI – farmer innovator  
FSSP – Food Staples Self-sufficiency Plan  
g – gram  
GAS – golden apple snail  
GC – gel consistency  
GIS – geographic information system  
GHG – greenhouse gas  
GLH – green leafhopper  
GPS – global positioning system  
GQ – grain quality  
GUI – graphical user interface  
GWS – genomwide selection  
GYT – general yield trial  
h – hour  
ha – hectare  
HIP - high inorganic phosphate  
HPL – hybrid parental line  
i - intermediate  
ICIS – International Crop Information System  
ICT – information and communication technology  
IMO – indigenous microorganism  
IF – inorganic fertilizer  
INGER - International Network for Genetic Evaluation of Rice  
IP – insect pest  
IPDTK – insect pest diagnostic tool kit  
IPM – Integrated Pest Management  
IRRI – International Rice Research Institute  
IVC – in vitro culture  
IVM – in vitro mutagenesis  
IWM – integrated weed management  
JICA – Japan International Cooperation Agency  
K – potassium  
kg – kilogram  
KP – knowledge product  
KSL – knowledge sharing and learning  
LCC – leaf color chart  
LDIS – low-cost drip irrigation system  
LeD – leaf drying  
LeR – leaf rolling  
lpa – low phytic acid  
LGU – local government unit
LSTD – location specific technology development
m – meter
MAS – marker-assisted selection
MAT – Multi-Adaption Trial
MC – moisture content
MDDST – modified dry direct seeding technique
MET – multi-environment trial
MFE – male fertile environment
MLM – mixed-effects linear model
Mg – magnesium
Mn – Manganese
MDDST – Modified Dry Direct Seeding Technique
MOET – minus one element technique
MR – moderately resistant
MRT – Mobile Rice TeknoKlinik
MSE – male-sterile environment
MT – minimum tillage
mtha⁻¹ – metric ton per hectare
MYT – multi-location yield trials
N – nitrogen
NAFC – National Agricultural and Fishery Council
NBS – narrow brown spot
NCT – National Cooperative Testing
NFA – National Food Authority
NGO – non-government organization
NE – natural enemies
NIL – near isogenic line
NM – Nutrient Manager
NOPT – Nutrient Omission Plot Technique
NR – new reagent
NSIC – National Seed Industry Council
NSQCS – National Seed Quality Control Services
OF – organic fertilizer
OFT – on-farm trial
OM – organic matter
ON – observational nursery
OPAg – Office of Provincial Agriculturist
OpAPA – Open Academy for Philippine Agriculture
P – phosphorus
PA – phytic acid
PCR – Polymerase chain reaction
PDW – plant dry weight
PF – participating farmer
PFS – PalayCheck field school
PhilRice – Philippine Rice Research Institute
PhilSCAT – Philippine-Sino Center for Agricultural Technology
PhilMech – Philippine Center for Postharvest Development and Mechanization
PCA – principal component analysis
PI – panicle initiation
PN – pedigree nursery
PRKB – Pinoy Rice Knowledge Bank
PTD – participatory technology development
PYT – preliminary yield trial
QTL – quantitative trait loci
R – resistant
RBB – rice black bug
RCBD – randomized complete block design
RDI – regulated deficit irrigation
RF – rainfed
RP – resource person
RPM – revolution per minute
ROQCS – Rice Quality Classification Software
RS4D – Rice Science for Development
RSO – rice sufficiency officer
RFL – Rainfed lowland
RTV – rice tungro virus
RTWG – Rice Technical Working Group
S – sulfur
SACLob – Sealed Storage Enclosure for Rice Seeds
SALT – Sloping Agricultural Land Technology
SB – sheath blight
SFR – small farm reservoir
SME – small-medium enterprise
SMS – short message service
SN – source nursery
SSNM – site-specific nutrient management
SSR – simple sequence repeat
STK – soil test kit
STR – sequence tandem repeat
SV – seedling vigor
t – ton
TCN – testcross nursery
TCP – technical cooperation project
TGMS – thermo-sensitive genetic male sterile
TN – testcross nursery
TOT – training of trainers
TPR – transplanted rice
TRV – traditional variety
TSS – total soluble solid
UEM – ultra-early maturing
UPLB – University of the Philippines Los Baños
VSU – Visayas State University
WBPH – white-backed planthopper
WEPP – water erosion prediction project
WHC – water holding capacity
WHO – World Health Organization
WS – wet season
WT – weed tolerance
YA – yield advantage
Zn – zinc
ZT – zero tillage
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