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Information and Communications Technology for Philippines Agriculture

FOUR PROPOSITIONS FOR AN ICT FRAMEWORK

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At the outset I would like to express my thanks for asking me to make comments on the PA 2020. I went over the volumes that were given to us and I see that in all the volumes, the importance of ICT in the overall policy strategy was evident. But I thought that besides all the statements distributed throughout the document, there should be a separate chapter or volume on ICT and agricultural development. And I have some suggestions on how this should be developed.

I have four propositions that could serve as a framework to develop the ICT: (1) First, agriculture, like any other industries, will become more knowledge-intensive in order to produce more with less. New tools of science make this possible. (2) Knowledge-intensive agriculture requires efficient knowledge management and ICT is critical to this. (3) Knowledge management is central to people, organizational empowerment. (4) The goal of ICT is to empower individuals and organizations.

In the first proposition, we see drivers that should force us to change: first, the rising consumer demands for food safety, enhanced environmental sustainability and food quality. The second is the rapidly expanding science and technology and the third is the global competition and farm subsidy. Thus, we have to change from resource-intensive agriculture to one that is knowledge-intensive. Farmers must learn to manage the same or fewer resources and be more sophisticated and efficient to increase productivity and profit in a sustainable production system. And I think that this is the challenge for PA 2020. We need to reduce poverty and improve the livelihood of the people in the rural areas. The key to this is really is farm management. I hope this can be well expanded in the PA 2020 as agriculture becomes

more knowledge-intensive, farm management becomes more complex and even more critical for success. Leveling-up farm income and its variability are highly influenced by all farm practices and circumstances and are not entirely the results of factors beyond the producers' control. And fourth, effective management information and resources is the foundation of knowledge-intensive agriculture. I hope that this could be more highlighted in the PA 2020.

The second proposition is that knowledge-intensive agriculture requires efficient knowledge management and ICT is critical. Knowledge management is the foundation of developing all concepts of learning and innovation and change. I wish to say that the agricultural bureaucracy must have a culture of learning and innovation to infect the farmers, so that the farmers develop a culture of learning and innovation. This sort of relationship between the DA bureaucracy and the farmers need to be well articulated in the document. Moreover, central to change management is that we have to change organizational culture, not only in the DA but the rest of the government. And central to this is knowledge management and therefore the cornerstone of excellence in governance. We wish to look at ICT as a tool of knowledge management, and knowledge management is central to achieving excellence in governance, so when you talk about transparency, accountability, productivity and participation—these are the more important objectives of knowledge management and organizational report, key to achieving competitive advantage in agriculture sector.

The third proposition is that knowledge management is central to people, organizational empowerment. And I think we can relate that to EDSA 1. People learned about EDSA 1 through the fax; at that time there was no text yet. And now text is so important, and text is the way people interact with one another. We talk about databases; databases are difficult to retrieve if you are from the rural areas. Now we talk about ICT to enable people to interact, to empower them. ICT to be more effective should be looked at as an empowerment tool, and I think it is the key message that we should drive at especially in this country. Let me illustrate this. We look at LGUs, agencies, private sector and the DA— you need to empower these organizations in order to serve more the farmers and the fisherfolk. Central to knowledge management are three things: (1) the ability to work together, (2) to share experiences, (3) to share knowledge, and (4) to learn with each other. When you are talking about farmers' growths, fishermen's growth, organizations, there should be processes and programs that will allow them to work with one another, share experiences, share knowledge and learn

from one another in order to gain knowledge and wisdom. And where is ICT here? ICT is a facilitator. It is not an end by itself. Many organizations have computers which are just expensive calculators and word processors. They are used by people to interact with one another. So we have to move beyond this paradigm of computers as expensive calculators and word processors but rather as a tool to communicate with one another.

The fourth proposition is that the goal of ICT is to empower individual and organizations. The three elements that need to be addressed in ICT policy which I hope will be taken in more detail in PA 2020, are structure, people and culture. You may have computers, you may have cell phones but the structure is antiquated and the people are not trained in order to use them properly. But remember the technology game plan is mainly in support of a bigger game plan on people empowerment. Here is a framework which we use in knowledge management. First we are so concerned with raw data, facts and numbers, but we have to go beyond that. We have to share information, data input into context but higher than that is, of course, knowledge information combined with experience, and the highest we would like to be able to share is especially the most difficult, which is wisdom. If you divide these two hierarchies, information and data are readily captured in documents, databases and are easy to retrieve. This is the usual use of ICT. But I think ICT should now focus on the upper level which is to share knowledge. How do farmers or people in the organizations share their wisdom so we do not have to learn from the beginning? In agriculture we talk about best practice, in organizations we talk about best practice, but many of these best practices remain to be best practice learned only in one location. You have to ensure that the best practice in an organization or in a farmer's field gets to be shared and that should be an important objective of knowledge management and central to this is ICT.

AFMA signed in 1997 had identified ICT as a tool for modernizing agriculture, but up to the present, it remains to be an elusive dream. Know why? Structure, people, culture, systems, processes, technology, these are the more fundamental problems we have in implementing this. I think the chapter or volume on ICT should discuss and analyze this situation incisively.

And this is what I recommend for this chapter on ICT: (1) develop a full chapter or volume on knowledge management of ICT on agriculture development. This volume should start with an incisive analysis of the role of ICT in knowledge management; (2) articulate an integrated and coherent ICT policy. The current statement in the PA 2020 is so broad, is does not have a handle which you can take with you and implement. On the part of

the lawmakers, for example, or on the part of the DA, they will need a handle to be able to bring the ball forward. Such policy should define how ICT can play a more catalytic role. Right now, DA has a culture of centralized planning; it has to move away from that. And then it has to have a detailed investment plan on knowledge management on ICT during the next 15 years.

A good model to look at is Canada. The title of their plan for Canada is: "Putting Canada First." This shows the very clear investment by the Canadian government to make Canada first in agriculture. It also gives a clear statement of goals and measures on how to achieve these goals. I wish that we could take some lessons from Canada as well as the United States Department of Agriculture as we define PA 2020.

A few comments on the PA 2020 which I was not able to give yesterday, I wish that these missing chapters or volumes will appear in the final edition— new tools of science and how science will address the issue of food security, poverty alleviation, peace and security. Infrastructure development should be broadened more than the way it is defined in PA 2020 which looks only at the physical structure. The more important structures we should develop are institutions. Institutions in this country, especially government institutions, have been compromised, in fact destroyed because of politics and we need to repair them. Reinvest in people and in the organization so they can do what they are supposed to do.

I also propose a separate chapter on knowledge management. To make technology a tool of development, technology must be at hands of the people who need and use them. That is the function of knowledge management. And the third, the role of the government and partnership is, the government for the last 10 years has taken the role of the private sector. They have used the vital resources to duplicate what the private sector is doing. The PA 2020 should define the role of government versus that of the private sector, the civil society within the framework of new institutional economics on public management. And I wish this could be well articulated. What should be the role, for example of DA vis-à-vis the LGU in the promotion of ICT in partnership with the private sector at the local level? And in effect there is good governance in agricultural bureaucracy. It has been shown that government can reduce transaction costs and it can influence up to 15% of the performance of the economy. I wish this could be well articulated because in the secretary's discussion yesterday, he says government should play a catalytic role. How we should do that?

Thank you for this opportunity and good morning.

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THE NATIONAL INFORMATION NETWORK OF THE DEPARTMENT OF AGRICULTURE

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I have noted that the discussion in the use and application of ICT in support of agriculture and fisheries development in the PA 2020 document was very limited. These limitations indeed are a challenge to ICT in a sector where it is used mainly or regarded as an enabling tool in support of a sector's modernization rather than as a catalyst for a sector's development. Let me brief you on the National Information Network (NIN) which is being presently implemented by the Department of Agriculture (DA).

The Agriculture and Fisheries Modernization Act (AFMA) of 1997 mandated the DA to set up a national information network. This is the enabling mechanism that links the department to the regional, provincial and municipal levels as well as provides our stakeholders ready- access to agriculture-related information on technology, market, and prices among others. This mandate is further elaborated in the national mobilization plan which was approved in 1998. The plan focuses on three major implementation requirements. Basically these are: information systems that were prioritized by a group of consultants, the required network infrastructure and the required institutional aspect to implement NIN. The law stipulates the provision of P800 million for the first year of its implementation and about P700 M per year for the next succeeding three years. Unfortunately, less than 5% of the total proposed budget of the program was actually released for its operationalization. With this limited amount, however, the DA was able to establish and operationalize its communication structure. It was able to link all regional offices as well as establish two remote sites, one at the Philippine Rice Research Institute (PhilRice) in Muñoz and its office at the University of the Philippines Los

Baños. All the DA's bureaus and attached agencies within Metro Manila are linked by leased lines. However, the implementation of thenceded information systems has lagged behind. This budgetary constraint has been further compounded by the fact that there is no formal unit in most agencies of the department to manage and administer the IT databases as well as IT resources. All are actually operating on an ad hoc basis. However, the department continuously explores some options in improving its services with the use of ICT, particularly, in the delivery of its final outputs.

Let me inform you of some of our initiatives right now. In the DA's performance of its regulatory functions, the aim is to computerize all existing manual procedures in the issuances of permits, licenses, certifications and other related instruments. This is in response to the call of the public for a more transparent transaction in the government. Starting next month, we will be developing an on-line import permit application to be piloted in four DA regulatory agencies namely: BFAR, BAI, NMIS as well as BPI. In the marketing assistance/support function, we hope to launch next month an electronic commercial portal for the Philippine agriculture and fisheries sector. This is consistent with our goal of transforming our existing website to a more dynamic and interactive one and providing ready access to the farmers and other stakeholders in the agribusiness sector of the much needed timely, relevant market and price information. In support of its extension function, we are supporting PhilRice in implementing an open academy for agriculture establishing a key learning facility project focused on rice and to be piloted initially in five provinces. We hope to expand this to cover other crops as well.

Corollary to this, we are presently collaborating with the University of the Philippines, the Commission on Higher Education, and the National Library in establishing the e-library project. Although this will not directly benefit farmers, however it will provide support to agricultural researchers, technicians as well as academics involved in the sector.

To supplement the effort of DA in its information dissemination, we have recently forged an agreement with Globe Telecoms in the application of SMS technology. The idea is to build a community of texters among stakeholders, wherein each sector can share information on all aspects agriculture, including prices, problems or issues, and comments affecting the sector. Recently, we launched with PAGASA, ULAT PANAHON and ULAT DAGAT. This is now available through the Globe mobile service using the number 2256. We also launched the DA *Presyo*, which provides

retail prices of selected commodities in Metro Manila on a daily basis. We intend to expand coverage to include other major trading and market centers nationwide. In support of these information services, we are also looking at the possibility of setting up call centers as well as information kiosks in major production and trading centers.

In the planning and advocacy function we are developing our GIS capability to further enhance our physical planning capability in the determination of priority rural infrastructure and in the identification of additional two million hectares of land for production expansion. We hope to consolidate all these information into a database repository or the NIN Knowledge Center. The NIN can facilitate the exchange and sharing of information and other allied databases among the DA data users. This is a challenging task considering the fact that DA has about 45 agencies nationwide.

Finally let me assure you that DA is supporting the NIN, by integrating its components in the regular programs and budget of various agencies of the department. We will continuously design new programs that will leapfrog the DA well into the ICT age. Thank you.