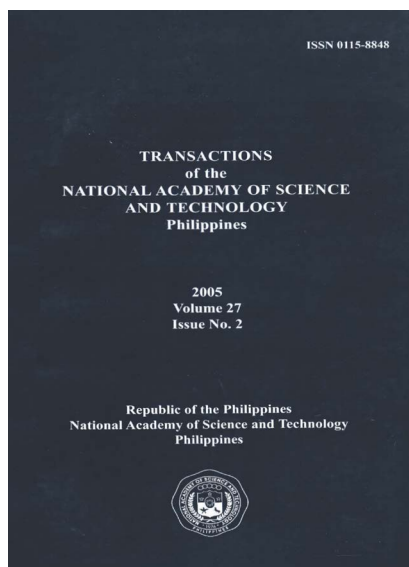


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## Agricultural Engineering Curriculum, Mechanization, and Standards

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## **Infrastructure and Support Services for Philippine Agriculture 2020**

### **AGRICULTURAL ENGINEERING CURRICULUM, MECHANIZATION AND STANDARDS**

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President

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My first recommendation is the establishment of a semi-specialized agricultural engineering curriculum. In the past, the normal practice in our industry is to hire agricultural engineers as cadet engineers for 2–5 years. The training is costly, and after the training, these trained engineers transfer to our competitors, or go abroad. Right now, we would like to hire agricultural engineers at entry level efficiency.

My second recommendation is the establishment of a department of agricultural mechanization services group. A recent study mentioned the fragmented mechanization programs of the Department of Agriculture. The commodity-based program of the Department of Agriculture has its own interpretation of mechanization requirements and implementing strategy. The World Bank stated that if mechanization does not keep pace with other agro-technologies, then this fragmented mechanization could slow down development. In the AMTEC section 46, the above concern is addressed and the establishment of a strong agricultural engineering group both at Department of Agriculture and LGUs was recommended.

At present, the Department of Agriculture has a national agricultural engineering coordination office which has to be strengthened and fully supported. Thus, for this purpose, an executive order can be used by the president to address this concern and implement section 46 of AMTEC.

Several specific projects should be planned and implemented.

First is the prevention of the occurrence of saline-intrusion. Our industry, the machinery industry is supplying a huge quantity of irrigation machinery all over the Philippines. According to studies by the World Bank, India,

China, and other parts of Asia have arid regions due to over-harvesting of ground water. In the Philippines, we are experiencing that, in some areas, we have saline-sulfur water coming out from our tubes. I think we should put in place a program to prevent the occurrence of saline-intrusion and to prevent the formation of arid region/areas.

Second, we need a master plan for farm-to-market roads. A more practical name perhaps will be a farm access road because the farm-to-market road is seemingly damaged by its implementation. The implementation is not as we expected.

Thirdly, we need to develop standards for the construction of farm-to-market or farm access roads. I was appointed by the Department of Agriculture to be the chairman to develop standards for farm-to-market road, culvert designs and riprap. The standards when developed can be followed by whoever constructs the farm access road, whether it is the National Irrigation Agency (NIA) or Bureau of Postharvest Research and Extension (BPRE).

Fourthly, credit should be available. There must be a program for high value farm machinery and equipment registration, so that these registered farm machinery and equipment can be used as collateral to acquire additional farm machinery and equipment needed by farmer owners.

A special credit program for agricultural machinery manufacturers to acquire more manufacturing equipment is needed. This is a partial solution to substandard level of manufacturing as mentioned in the paper given to us.

Lastly, we need to strengthen the linkage between and among the stakeholders, the farmers, the private sector and the farm machinery developer to address the continuous mismatch of available mechanization and technologies and farmers. Dr. Cachuela has produced many prototypes in the BPRE but because of lack of funds, these products like the beans player, corn picker, corn planter, etc., have not reached the farmers. I would like to also mention that we have standards in the production of machineries through the leadership of Dr. Arsenio Resurreccion of the Agricultural Machinery Testing and Evaluation Center of the University of the Philippines Los Baños.

We hope that through creativity and resourcefulness, we can establish better standards for agricultural machinery. Thank you very much