

MAKING RESEARCH ON THE INDUSTRY NEEDS BASIS¹⁾

Dr. Ketut Wirawan
Rector of Dwijendra University-Denpasar
(wirawan_dj@yahoo.co.id)
Ir. Gede Sedana, M.Sc. MMA
Dean of Agriculture Faculty-Denpasar
(gedesedana@yahoo.com)

ABSTRACT

University is one of the institutions which have great roles in supporting the development in terms of social, economic and other sectors through the research activities. Nowadays, the universities have strongly expected to emphasize their researches for fulfill the complex needs of society including internal universities. It has still found that a few research conducted does not fit to the needs, particularly industry needs. For instance, some researchers are only documented in the library because they are not practical or implementative ones. Therefore, it should be more intensively invited the researchers to consider the topics relating to industry needs in order to make sense of the researches results. This paper has objectives to describe the alternative strategies that might be advised to improve the quality of research in the relation to industry needs; and to recommend the efforts which should be done for supporting the appropriate research.

Results of research should be beneficial for the industry development in order to improve the efficiency and effectiveness of technologies such as social engineering, management as well as techniques of production, etc. Alternative strategies which might be advised to achieve these as follows: (i) identifying the needs of industries; (ii) preparing the action plans for making research based on the priority, including defining the types of research; (iii) implementing the selected research; (iv) evaluating the research benefits. These could be done by some efforts by strengthening capacity of research institution in the university, including the aspects of human resources, finance and facilities. These are needed the training, collaborative research with industries or other institutions, having sponsorship aside from the incentive.

Key words: Research institution, industry, type of research, and development

I INTRODUCTION

University is one of the institutions which have great roles in supporting the development in terms of social, economic and other sectors through the research activities. An important unit established for this is Research Institution. Research itself constitutes a structured enquiry that utilizes acceptable scientific methodology to solve problems and create new knowledge that is generally applicable [1]. As one of the knowledge sources, research institution should intensively and frequently develop existing and find new knowledge and innovation by doing researches. In

1

*Paper presented on the ASAIHL International Conference held in Universitas Airlangga
30 April – 3 May 2013*

terms of development, knowledge is very useful for all sorts of things, such as designing new technologies, modifying existing technologies, improving innovation and others.

Industry sector is one of the users of the research results. There is strong link between the research institution and the industry in order to provide the products needed by the consumers. The industries need more innovation for improving the quality and quantity of products produces. Results of research will play important roles in enhancing the capability of companies as they stimulate innovative methods of production, reduce costs and improve product quality [2]. Therefore, there is a big chance for the research institution to supply knowledge, innovation and technologies needed by industries. The universities should strongly conduct their researches for fulfilling the complex needs of society (industry) aside from internal universities' needs. Research conducted must always be high quality in order to produce knowledge that is applicable outside of the research and have implications for policy and project implementation. The results of research must be published and disseminated to the direct users and others.

However, it has still found that a few research conducted could not fit to the needs, particularly industry needs. For instance, some researchers are only documented in the library because they are not practical or applicative ones. Another problem is collaborative research between university and industry still in a small number. Generally, the industries have a unit functioning to do research, called Research and Development. In a business sector, this is connected to marketing, cost management, human resources management and other parts of business strategy. Therefore, it should be more intensively invited the researchers to consider the topics relating to industry's needs in order to make sense of the research results. Research could be done in the laboratory, field site, and other places dependent on the objective or goals of the research.

This paper has objectives to describe the alternative strategies that might be advised to improve the quality of research in the relation to industry needs; and to recommend the efforts which should be done for supporting the appropriate research.

II ALTERNATIVE STRATEGIES FOR MAKING RESEARCH ON THE BASIS OF INDUSTRY NEED

A growing number of people and industries are discovering the need for research as a resource for development in order to produce high quality of goods and services. As cited above, research is an important component in the development of what we call the 'knowledge-based society' [3]. Owing to respond the needs of industry, it is needed the effort to develop competitive and innovative research the industries, strengthen scientific research, and foster collaboration between industry, business and research sectors [4]. Results of research should be beneficial for the industry development in order to improve the efficiency and effectiveness of technologies such as social engineering, management as well as techniques of production, etc.

2.1 Process of making research

Research is generally regarded as a systematic investigation, including research development, testing and evaluation, designed to develop or contribute to generalizable knowledge. There are some steps in doing research for having appropriate findings based on the problems found. In the relation to have good research that base on the industry needs, the process that should be considered as follows: (i) identifying the needs of industries; (ii) preparing the action plan for making research based on the priority, including defining the types of research; (iii) implementing the selected research; (iv) evaluating the research benefits.

Identifying and making priority the needs of industries. In line with a fast development in multiple sectors make more complex problems encountered by the community including the industries. The industries always endeavor to increase the goods and services produced. Some of their problems could be solved by themselves. The other problems might be sent to the universities (through research institution) for the solutions. Many problems or needs of the industries could not be solved in the short period of time or in the same time. Therefore, it is needed the process of needs identification.

Before implementing the research, it should be done the priority of the research to be selected. Based on the identification of industries' need, the research institution then make priority of what research must be done. The statement of research problem must be clear. The researcher team should pay attention on what caused the need to do the research as problem identification. At least, the research selected must be applicable and beneficial for the industry. Some considerations of research selection are researchable, availability of data or information, capacities of researchers, time and budget allocation.

Preparing the action plan. Having various industries' needs which have been identified, the research institution should prepare the plans in the relation to answer and fulfill such needs. Regarding the constraints in the institution side, making priority is very important to carry out in order to pay more attention on the real needs. In agribusiness development program, for instance, the research institution could prepare the action plan as guidance for achieving the goals of study. The institution should establish team work comprising multiple disciplines, such as agriculture, agribusiness, sociologist, and economist. One of them is a coordinator for the research team. For this matter, research team should know well the users of research results, such as agro industry including agro-tourism industry.

Action plan prepared, of course, is fully dependent on the objectives or goals, budget, time or duration of the research and type of research as well. Type of research has significantly influenced the uses of budget and time. Participatory Rural Appraisal (PRA) research [5] [6], for example, will take more time rather than survey, thus will bring about much more budget needed. This has some principles, namely: direct learning from local people, offsetting biases, optimizing tradeoffs, triangulating, and seeking diversity. The action plans contains goals or objectives, detail activities, venues or locations of activities, schedule of works, person in charge, budget for each activities, the techniques or ways or methods and others. The other type of

researches could be done by employing quantitative method. Quantitative research methods entail the use of systematic and sophisticated procedures to test, prove and verify hypotheses [7] [8]. The action plan will be different for the certain research's goals or objectives. Concerning this, the suitable action plan will significantly influence the results of research which might be applicable for the industry.

The goals of research must match to the needs of industry in terms of technologies, knowledge, management and other aspects. Concerning agribusiness development, the results of research at least give information to the agro-industry to produce products or goods needed by farmers, to prepare the processing unit and marketing of farmers' produces. Theoretically, agribusiness refers to the whole production system including the supply of agricultural inputs and equipment, agricultural production, agricultural products storage, agricultural products processing and distribution, marketing and other agriculture related derivative products [9] [10].

Implementing the selected research. Having the action plan as cited above, the coordinator of research team takes an initiative to have preparation for implementing the selected research. Who should do for what must be clearly stated in order that the plan defined could be properly done. During the implementation of research (dependent on the type of research), consultative process should be intensively done among the researchers, and the field staff (if available). Another important thing which must be considered is how to employ the research method in order that the research findings have good validity and reliability for fulfilling the needs of industry. This consists of instrument for data collection, research design, techniques of data collection, data analysis, interpretation and writing the conclusion including the recommendations and its implication.

Evaluating the research benefits. After the research completed, it is very important to have evaluation towards the findings and usefulness of the research for the users (industry). This could be done by having a questioner that might be filled in by the users and doing observation to the users. Another way that could be done is by interview the users in the relation to results of research whether these are appropriate or not.

2.2 Supporting efforts

In order to support the process of making research as mentioned above, there are some efforts should be done by the research institution in the university. Internal factors of research institution, particularly the weaknesses such as limited capacities of researcher, lack of finance and facilities must be firstly overcome. The activities needed are strengthening capacity of research institution in the university (human resources). This might be in the forms of training, workshop and giving chance to conduct a research and incentive. The course of research training is aimed at enhancing and developing skills and competencies across the spectrum of research methods, balancing the acquisition of specialist knowledge with the ability to apply a range of research techniques in a practical environment, and writing research proposal.

Finance constraint in the research institution could be solved by providing much more budget from the university and having grant from the donor agency. For having grant, the research staff must have good skill in writing proposal in which the results of research must be able to respond the problems or needs of users (industry). Aside from this, the collaborative research with industries will be more beneficial for them. The research institution should make or offer the proposal pertaining to the needs of industry and bring the tentative solutions. Negotiation skills of researchers are very important for the collaborative research aside from the profile of research institution. Trust building is a part of this collaboration research, too.

3 Conclusion

Challenging the global development, industry sector is one of the users of the research results coming from the research institution. The needs of industry should be responded by the research institution for producing proper and high quality of goods and services for their consumers. Alternative strategies which might be advised to achieve these as follows: (i) identifying the needs of industries; (ii) preparing the action plans for making research based on the priority, including defining the types of research; (iii) implementing the selected research; (iv) evaluating the research benefits. These could be done by some efforts by strengthening capacity of research institution in the university, including the aspects of human resources, finance and facilities. These are needed the training, collaborative research with industries or other institutions, having sponsorship aside from the incentive.

References

- [1] Kothari, C.R., 1985, *Research Methodology- Methods and Techniques*, New Delhi, Wiley Eastern Limited.
- [2] Mahmoud El-Jafari, Ibrahim Abu Hantash, Sarah Al-Haj Ali. *The Rolle of Research and Development in Enhancing the Competitiveness of the Palestinian Private Sector*. Palestine Economic Policy Research Institute. 2008
- [3] The Department for Development Policy and the MFA Information Service. *Research for development*. Government Offices of Sweden. 2010.
- [4] The Department of Industry, Innovation, Science, Research and Tertiary Education. <http://www.innovation.gov.au/AboutUs/Pages/default.aspx>
- [5] Joachim, T. and Grady, H. M. *Participatory Rapid Appraisal for community development*. International Institute for Environment and Development. 1991.
- [6] Robert Chambers. Participatory Rural Appraisal (PRA): Challenges, Potentials and Paradigm. *World Development*, Vol. 22, No. 10, pp. 1437-1454, 1994.
- [7] Glaser, B.G. and Strauss, A.L. *The Discovery of Grounded Theory*, Chicago, Aldine. 1967.
- [8] Demirbag, M. *The Dynamics of Foreign-Local Joint Venture Formation and Development in Turkey*, unpublished Ph.D. thesis, University of Bradford Management Centre, Bradford, UK. 1994.
- [9] Davis, J. and Goldberg, R.A. *A Concept of Agribusiness* [M]. Harvard University Press, 1957.

[10] Zhou Yingheng and Geng Xian-hui. Re-understanding of modern agriculture [J]. *Research of Agricultural Modernization*, 2007

6 | Paper presented on the ASAIHL International Conference held in Universitas Airlangga
30 April – 3 May 2013