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University-Industry Linkages in the Disaster Resilience Sector: A Case Study of Thailand

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Abstract

University-industry linkages in the Disaster Resilience Sector in Thailand were studied at two main levels: the national level and the institutional level. Comparisons were made of specific data such as the linkage structures, lessons learnt, policies and barriers, between Thailand and developed countries such as the United Kingdom. This analysis was done to identify the key elements, factors and contexts in constructing and maintaining university-industry linkages in various spectrums and approaches, and to apply these to the Disaster Resilience Sector. These results can be further developed as guidelines for universities in developing countries that wish to develop university-industry linkages. The study also addressed a specific university-industry linkage called 'secondment plan' which includes university policies on the detachment of university staff from their regular work or position in the university for temporary assignment in industry sectors. For this part, the Talent Mobility Project, a governmental project that supports Thai university staff, particularly academic staff, in doing cooperative work with the industry sector, was analysed. This project is the responsibility of the National Science Technology and Innovation Policy Office (STI) of Thailand. The weakness and the strengths of this project were identified through interviews with senior staff of STI, Science Park and Naresuan University. The results have been developed into a guidelines model for universities in developing countries.

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Keywords: University-Industry Linkages; Secondment Plan

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1. Introduction

Previously in Thailand, university-industry cooperation was established through training activities, provision of services and consulting, and research work [1]. Most of the cooperative work was based on personal contact between academia and industry. Recently the "University-Industry Linkages (UILs)" programme has been promoted by Thai government. UILs are of benefit not only for research and development (R&D) but also to exploit synergies and complementarities of scientific and technological capabilities between, especially, the developing countries. The UILs have been successful in increasing new product introduction and issuing of patents as a result of such collaborations [2]. UILs can expand the relevance of research carried out in public institutions, foster the commercialization of public R&D outcomes, and increase the mobility of labor between the public and private sectors. Typologies of UILs can vary from low to high intensity, depending on the objectives, scope and institutional arrangements. The activities in each level of intensity of the linkages are: in the low intensity linkages, transferring and commercialization of intellectual property, scientific publications, and informal interaction. The medium intensity linkages imply mobility of participants and functions such as academic entrepreneurship and human resource training and transfer, and closer relationships are envidaged in high intensity linkages including research partnerships, research services and shared infrastructure [3]. As well, skill development can be done through the UILs, including education and training, the generation, acquisition and adoption of new knowledge (innovation and technology transfer), and the promotion of entrepreneurship via start-ups and spin-offs [4].

UILs may take place with different focuses depending on the university's mission. Such focus may be on training in the teaching university, on R&D in the research university, and on technology commercialization in entrepreneurial university [5]. UILs may be short term or long term collaborations. Short-term collaboration generally consists of on-demand problem solving with predefined results and tend to be articulated through contract research, consulting, and licensing. Long-term collaborations are associated with joint projects and public-private partnerships including privately-funded university institutions or chairs, joint university-industry research centers, and research consortia [6].

Thailand has been stuck in a middle-income trap for over 20 years. In 9999 the Triple Helix system of innovation [8], a tool to strengthen the connection of government, university and industry in Thailand, was introduced by STI as a tactical process aimed at pulling Thailand out of the middle-income trap. This model was superceded in 2016 when the Thai Government launched a new campaign entitled Thailand 4.0 which is a new tactical and economic model with similar intentions to push the country into the high-income range. The government aims to enhance the country's standing and to become a high-income nation through development of its knowledge-based economy with an emphasis on research and development, science and technology, creative thinking, and innovation. The key components in the country's national innovation system are the UILs which can help Thai producers to initiate, import, modify and diffuse technology [7].

Thailand is located in an area with a low frequency of usually low intensity disasters. Big disasters rarely happen in Thailand, notwithstanding the disaster of the great flood in 2011 and the tsunami in 2004. Disaster resilience (DR) research work is not therefore considered as a priority research focus group in Thailand 4.0 which is more focused on economic development rather than social development. Research funding is usually allocated according to national priorities, meaning that researchers should tie their research work in the DR area into one of the main priority national research fields to receive funding. Industry, in the DR sector, means all of government organisations, non-profit organisations and the private sector as a whole.

Therefore, the objectives of our research, as will be presented in this paper, were to explore the situation of UILs in Thailand, especially in the field of disaster resilience, and to analyze the "University-Industry Linkages (UILs)" programme at two main levels: the national level and the institutional level, and to compare the linkage structures, lessons learnt and policies and barriers identified from these activities in Thailand and developed countries, such as the United Kingdom (UK). The research methodology of the study included a literature review and data collection through in-depth interviews with senior officials, and content analysis of the interview responses. The study concentrated on a specific UIL called 'secondment plan', which covers university policies for the detachment of university staff from their regular work or position for temporary assignment in industry sectors.