北 大 水 産 彙 報
65(2), 117–124, 2015.
DOI 10.14943/bull.fish.65.2.117

Internationalization of higher education in fisheries sciences in Vietnam, Thailand, and the Philippines : Results of a survey of motivations and priorities

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(Received 20 April 2015, Accepted 25 May 2015)

Abstract

This study presents and discusses the results of a survey of internationalization of higher education in fisheries science at four universities in Vietnam, Thailand, and the Philippines. Faculty members were asked about the importance, rationales, benefits and risks of internationalization at their universities. Information was also collected on the importance of foreign-language training, geographic priorities, and obstacles. More than 90% of respondents ranked internationalization either a high or medium priority. At every university, the most important reason to internationalize was to strengthen research and knowledge capacity and production. Key benefits included improved academic quality, and strengthened research and knowledge production. Nearly two-thirds of respondents noted internationalization also has associated risks; the most important were loss of cultural or national identity, and brain drain. The foreign language ranked most important was English. Japan and the ASEAN region ranked consistently high in importance for international collaboration, indicating the importance of intra-Asia collaboration, but efforts should be made to prevent less-developed countries and institutions from being left behind. The most important obstacle to internationalization at all universities was lack of financial support.

Key words : Internationalization, Higher education, Southeast Asia, ASEAN Economic Community

Introduction

Fisheries and aquaculture make vital contributions to food security and poverty alleviation in developing countries (Allison, 2011). Millions of the world's poor depend on fish both as a source of protein and micronutrients, and as their main source of income (FAO, 2012), so it is critical that fishery and aquaculture systems are sustainable. This is especially true in Southeast Asia, where fisheries are vitally important to the food security and economies of the region (Lymer et al., 2010).

Institutions of higher education can play an important role in promoting sustainable development because of their scientific expertise, unbiased position, and tradition of engaging in local problem solving (Sachs, 2009). They develop the human capital needed to compete in a global economy, as well as new knowledge and technologies that have economic impacts (Bloom et al., 2006 ; McMahon, 2009). But higher-education institutions in developing countries now face growing external challenges, including globalization. In Southeast Asia, the ten member states of the Association of Southeast Asian Nations (ASEAN) have agreed to create an integrated ASEAN Economic Community (AEC) by the end of 2015 (ASEAN Secretariat, 2008). One goal of the AEC is to integrate the higher-education systems among member states through measures such as increased student and faculty mobility, synchronized academic calendars, mutually recognized university degrees, and increased collaboration in research and extension.

Internationalization of higher education (defined here as the process of integrating an international, intercultural, or global dimension into the purpose, functions or delivery of postsecondary education (Knight, 2003a)) has become a topic of interest and debate (Knight, 2008). In Southeast Asia, rapid changes are going to pose new challenges for higher-education institutions. In this study, we identify and discuss the key issues and trends now facing fisheries schools in this region.

Materials and Methods

A survey was conducted between 2011 and 2013 of faculty members at four of the largest fisheries schools in Southeast Asia : Kasetsart University, Faculty of Fisheries (Thailand) ; Nong

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Table 1. Universities, schools, and countries of survey respondents.

University	School	Country	Respondents (No.)
Kasetsart University	Faculty of Fisheries	Thailand	30
Nong Lam University	Faculty of Fisheries	Vietnam	21
Can Tho University	College of Aquaculture & Fisheries	Vietnam	18
University of the Philippines Visayas	College of Fisheries and Ocean Sciences	Philippines	17

Lam University, Faculty of Fisheries (Vietnam) ; Can Tho University, College of Aquaculture & Fisheries (Vietnam) ; and the University of the Philippines Visayas, College of Fisheries and Ocean Sciences (Table 1).

Information was collected using a questionnaire modeled on one used in a survey of the internationalization of higher education conducted by the International Association of Universities (Knight, 2003b). The questions focused on six topics : (a) importance of internationalization and expected benefits, (b) reasons for internationalization, (c) risks, (d) foreign-language training, (e) geographic priorities, and (f) obstacles.

For topics (a-importance), (e), and (f), respondents were asked to rank each factor as being of high, medium, low, or no importance. To determine the relative rankings of factors in topics (e), and (f), the scores were transformed to importance indices based on the following formula :

$$\text{Relative importance index}=\frac{\Sigma w}{AN}$$

where w is the weighting given to each factor by the respondents, ranging from 1 (no importance) to 4 (high importance), A is the highest weight (*i.e.*, 4) and N is the total number of samples. For topics (a-benefits), (b), (c), and (d), respondents were asked to choose the three most important factors from lists provided. All factors on the lists are shown in the figures for these topics (*i.e.*, Figures 2, 3, 4 and 7). In the case of tied ranks, each factor was treated equally (*e.g.*, when several factors were ranked most important).

The questionnaires were sent to each university by mail for distribution to all faculty members, and follow-up discussions were conducted at each university. Response rates from faculty members at the four institutions ranged approximately 30-60%.

Results

Importance of internationalization and expected benefits

Two-thirds of the respondents ranked internationalization a high priority at their institution, as did most respondents in Vietnam and the Philippines (Figure 1). At each institution, internationalization was ranked either a high or medium priority by 93-100% of the respondents.

Nearly all respondents (99%) said that promoting and investing in internationalization of higher education offers benefits, confirming its importance. The overall top-ranked benefit was improved academic quality, followed by strengthened research and knowledge production (Figure 2). In Vietnam, innovation in curriculum, teaching and research was also seen as an important benefit. Increased revenue generation was ranked low in importance as an expected benefit, particularly in Thailand and the Philippines.

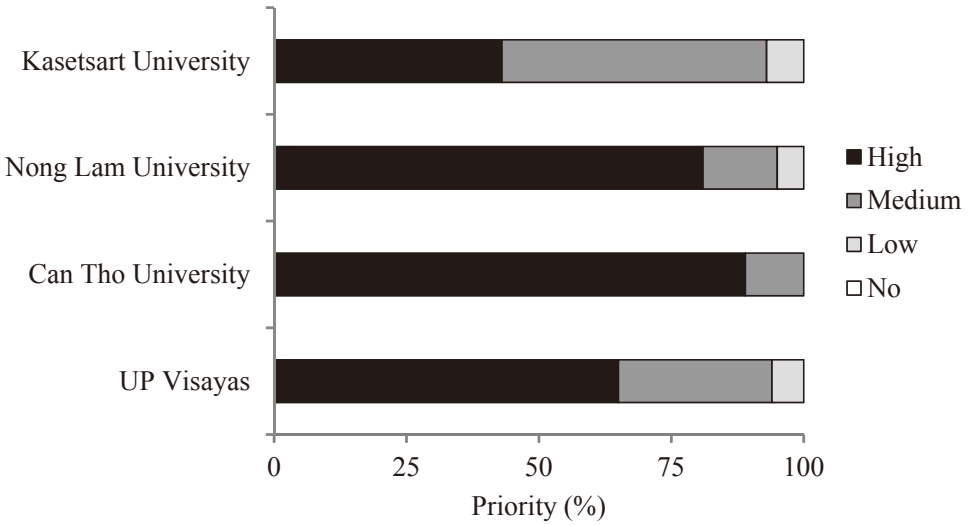

Fig. 1. Importance of internationalization at each institution. Figure shows percentage of respondents that selected each priority level.

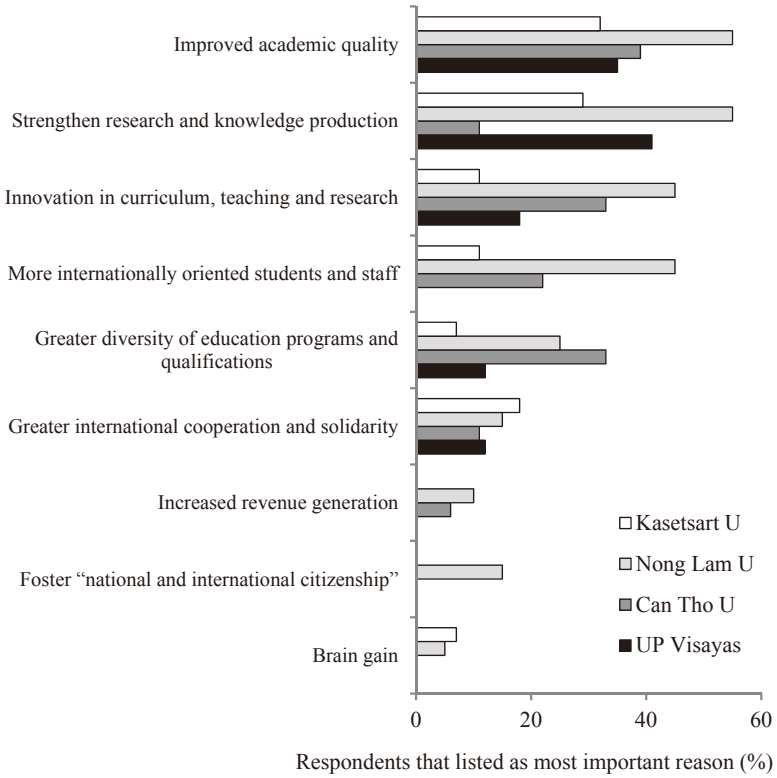

Fig. 2. Importance of benefits of internationalization at each institution. Figure shows percentage of respondents that selected each factor as the most important benefit.

Reasons for internationalization

The most important reason to internationalize was the same at every institution – to strengthen research and knowledge capacity and production (Figure 3). Also important was its contribution to the institution's academic quality. Thus the key rationales driving internationalization and its perceived benefits were consistent. The lowest-rank reason at all institutions was to diversify income generation.

Risks

The universal perception that internationalization benefits higher education was qualified by the fact that 63% of the respondents said that it also brings risks. The overall most important was loss of cultural or national identity (Figure 4), selected by 43% of respondents as the most significant risk. This was followed by brain drain, which was ranked first by 33% of the respondents. The issue of language is often closely tied to the question of culture, but the overuse of English as a medium of instruction was viewed as a low risk at all institutions.

Foreign-language training

The demand for foreign-language training was reported to be increasing in Vietnam (100% of respondents) and Thailand (83%) (Table 2). In both countries, English was ranked by far the most important foreign language. (In the Philippines, English is an official language and, thus, not considered a "foreign language", so this country was excluded from this section of the study.)

Languages of secondary importance included Mandarin Chinese in Thailand, and Japanese and French in Vietnam.

Geographic priorities

Japan and the ASEAN region ranked consistently high in importance for international collaboration, indicating the importance of intra-Asia collaboration (Figure 5). Europe was also an important region for Vietnam. Collaboration with China, however, was ranked of lower importance. The region of lowest importance for all institutions was Africa. Within the ASEAN countries, Thailand and Malaysia ranked consistently high (Figure 6). Two countries that consistently ranked low were Burma (Myanmar) and Cambodia.

Obstacles

At every institution, the biggest obstacle to internationalization was lack of financial support (Figure 7) ; this obstacle was ranked of high importance by 57% of respondents. The rankings suggest that senior leaders at institutions recognize the importance internationalizing and that faculty members are interested and involved,

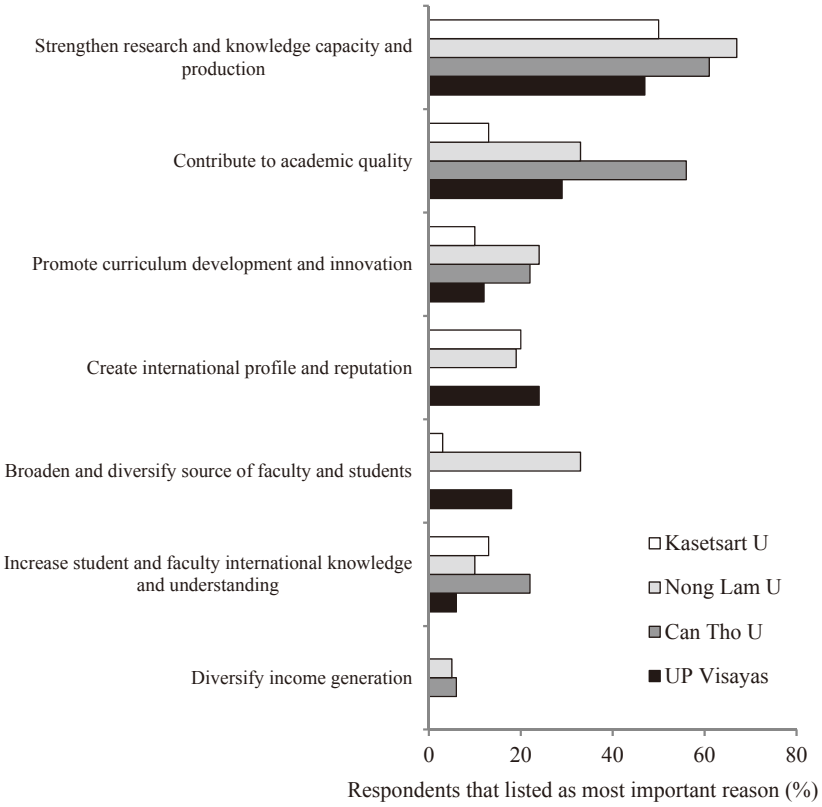

Fig. 3. Importance of reasons for internationalization at each institution. Figure shows percentage of respondents that selected each factor as the most important reason.

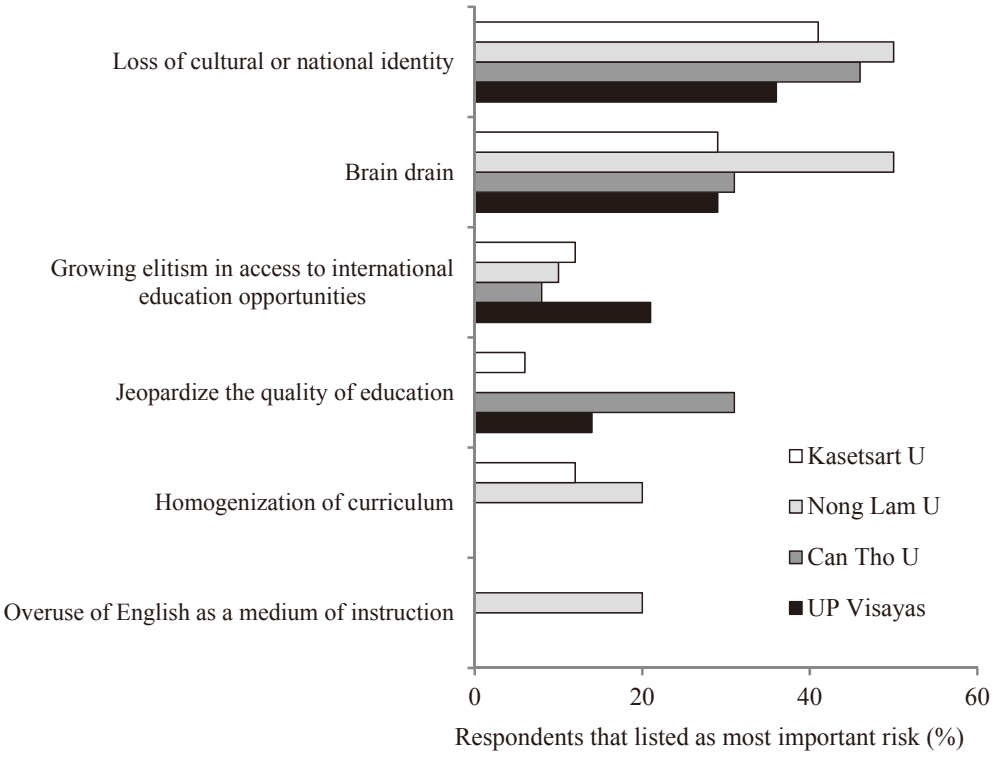

Fig. 4. Importance of risks associated with increased internationalization at each institution. Figure shows percentage of respondents that selected each factor as the most important risk.

Table 2. Demand for foreign language training (%) and languages ranked of highest interest by respondents (%).

	Institution		
	Kasetsart U	Nong Lam U	Can Tho U
Demand for foreign-language training			
Increasing	83	100	100
Steady	13	0	0
Decreasing	3	0	0
Language			
English	100	100	100
Japanese	0	0	12
Mandarin Chinese	4	0	12
French	4	0	18
German	0	0	6

Note : Due to tied ranks, under *Language*, percentages for Kasetsart U and Can Tho U each totaled more than 100%.

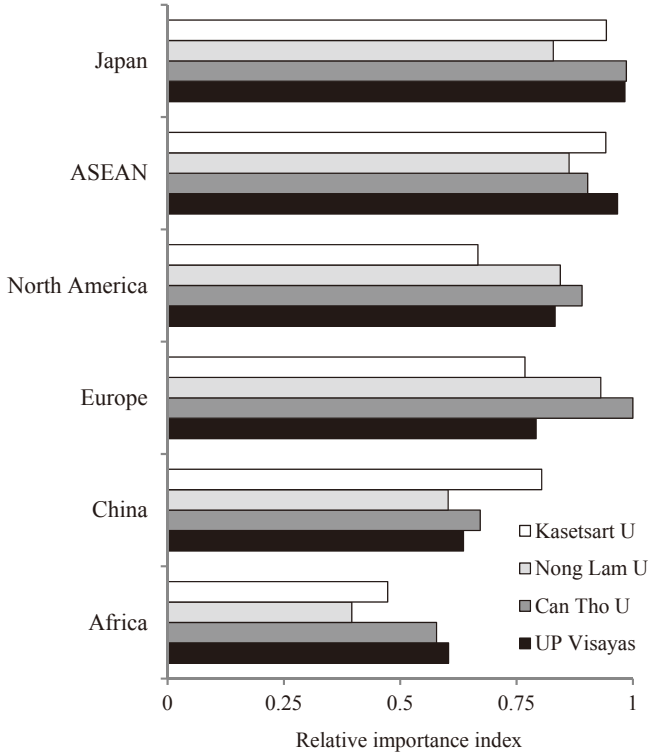

Fig. 5. Importance of regions for international collaboration at each institution. Ranks are based on the relative importance index (described in text).

but that efforts are being hindered by a lack of money, time and experienced staff.

Discussion

Nearly all respondents ranked internationalization a high priority, and in all three countries, internationalization is viewed as an important way to strengthen research and knowledge production, and improve academic quality. But while the benefits of internationalization are numerous, there are also associated risks. Related to human resource development is the issue of brain drain, which has been a long-standing concern in much of Southeast Asia (Asian Development Bank, 2012). The international movement of highly skilled persons is complex, and some prefer to use the

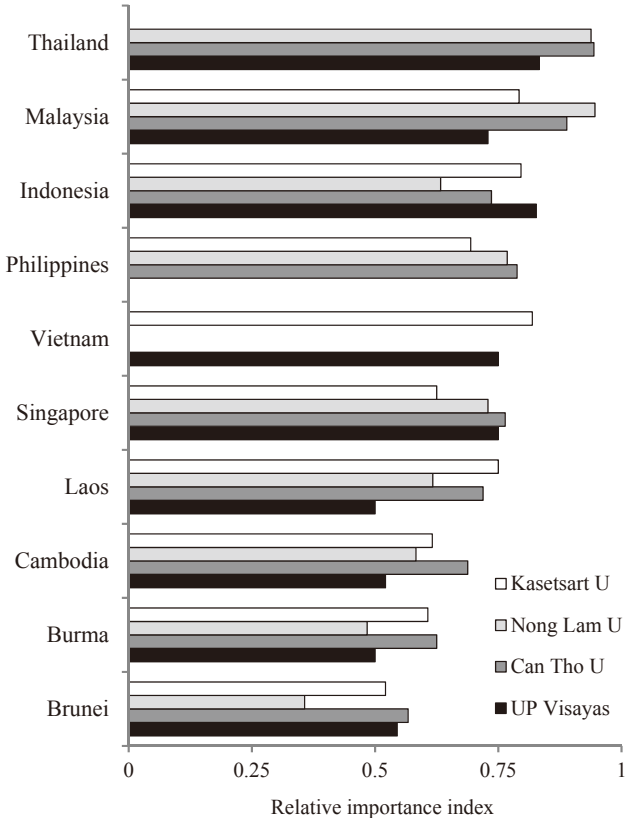

Fig. 6. Importance of ASEAN countries for international collaboration at each institution. Ranks are based on the relative importance index (described in text).

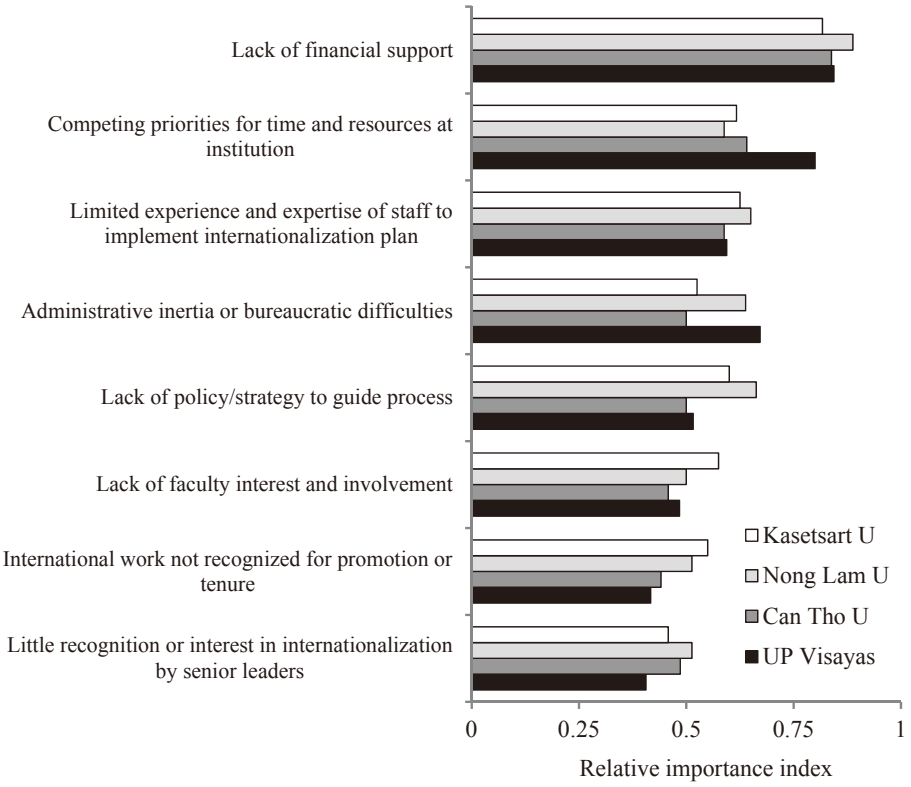

Fig. 7. Importance of obstacles to internationalization at each institution. Ranks are based on the relative importance index of each obstacle (described in text).

term *brain circulation* rather than *brain drain* (Montgomery, 2013), but recent evidence suggests that in the current era of globalization, the flow continues largely in one direction, from poorer to wealthier countries (Altbach, 2013a). When the AEC is established in 2015, restrictions will be lifted within ASEAN countries on the movement of skilled labor, so policymakers will need to consider mechanisms that enhance the benefits of this increased mobility, but alleviate its negative consequences.

Critics have noted the dangers associated with the global spread of English (*e.g.*, Phillipson, 1992), but respondents in our survey did not view overuse of English in instruction as a risk. English is now spoken by close to 2 billion people in more than 120 nations and the medium for over 90% of international science communication (Montgomery, 2013), so it is requisite for participating at an international level. There is little chance this will change soon. No country can hope to advance scientifically without having scientists who can communicate in English. We urge higher-education institutions to fully integrate English into their science curricula, with English considered a core subject rather than as a "foreign language" (Gradoll, 2006).

At all institutions surveyed, the most significant obstacle to internationalization was lack of financial support. In many countries, the state has traditionally been the main funder of higher education, but throughout Asia, the funds available have been squeezed due to exploding enrollment rates (Asian Development Bank, 2011). One current strategy is to encourage the growth of fee-based higher education. The rationale for introducing new fees in public universities is strong, but shifting costs to students raises new issues, most notably related to equity of access (Asian Development Bank, 2011). Increased revenue generation was seen by respondents as one of the least important benefits of internationalization, and the least important rationale at every school was to diversify income generation, which indicates that at the institutions surveyed, economic rationales are not the top driver of internationalization. Similar results have been reported in other surveys of internationalization in higher education (Knight, 2012).

One result of globalization has been the growing importance of regions. This can be seen in regional-based trade blocs and organizations, but is also true for higher education (Knight, 2008). Cross-border collaboration among higher-education institutions is a widely advocated strategy for strengthening higher-education systems (Sakamoto and Chapman, 2011). In the present study, respondents ranked Japan and ASEAN the overall most important regions for international collaboration. Such intraregional collaboration among Asian universities has grown dramatically during the last ten years.

Institutions in developing countries need such collaboration to build capacity, especially through staff training and development. These are the countries that will benefit most from regional collaboration. Yet their universities can face disadvantages in the systems commonly used to rank global institutions of higher education, so it is important that universities in developed countries not limit academic cooperation to universities listed in the global rankings (Altbach, 2013b). Countries ranked low priority for international collaboration in the present study tend also to be ranked low on the Human Development Index (*e.g.*, Burma and Cambodia) (United Nations Development Programme, 2013). Many will benefit from internationalization of higher education, but efforts must be made to prevent less-developed countries and institutions from being left behind.

Conclusion

Fisheries in Southeast Asia play a critical role in ensuring food security and providing livelihoods, particularly in poor coastal communities. A key issue facing fishers is depleted fish stocks (Stobutzki et al., 2006), which are due largely to overfishing and aggravated by habitat and environmental degradation, as well as poor economic conditions in fishing communities. Annual per capita fish consumption in Southeast Asia between 1961 and 2009 more than doubled (FAO, 2012), and as the population increases, so too will the demand for fish, which will increase concerns about food security (Garces et al., 2008).

Due to their range of scientific knowledge, institutions of higher education can help solve many of the issues now facing fisheries in Southeast Asia by training and producing graduates who can contribute to fisheries and aquaculture development. But as globalization reshapes these institutions, they face inherent risks and significant obstacles, particularly lack of financial support, that limit their ability to compete internationally. Increased financial support from governments will be crucial for improving the quality of fisheries education in a region where millions of people depend on fish for food and income.

Acknowledgments

This study was conducted as part of the Asia and Africa Science Platform Program "*Establishment of Research and Educational Network for Science of Sustainable Fisheries in Southeast Asian Marine Community*" sponsored by the Japan Society for the Promotion of Science (JSPS). We thank Dr. Jane Knight for critically reviewing the manuscript. We also thank the survey participants.

Literature Cited

Allison, E.H. (2011) Aquaculture, fisheries, poverty and food security. Working paper 2011-65. The WorldFish Center, Penang, Malaysia. 60 pp.

Altbach, P.G. (2013a) Does anyone care about developing

countries : Brain drain or brain exchange ? *International Higher Education*, **72**, 2–4. The Boston College Center for International Higher Education.

Altbach, P.G. (2013b) Don't take too much notice of rankings. University World News. 264. 23 March 2013. http://www.universityworldnews.com/article.php?story=20130319153158349 ; accessed 22 July 2015)

ASEAN Secretariat (2008) ASEAN Economic Community Blueprint. ASEAN Secretariat, Jakarta. 56 pp.

Asian Development Bank (2011) Higher education across Asia. An overview of issues and strategies. Asian Development Bank, Manila. 55 pp.

Asian Development Bank (2012) Counting the cost. Financing Asian higher education for inclusive growth. Asian Development Bank, Manila. 51 pp.

Bloom, D., Canning, D. and Chan, K. (2006) Higher education and economic development in Africa. World Bank, Washington, DC. 84 pp.

FAO (2012) The state of world fisheries and aquaculture 2012. Food and Agriculture Organization, Fisheries and Aquaculture Department, Food and Agriculture Organization of the United Nations, Rome. 209 pp.

Garces, L.R., Pido, M.D. and Pomeroy, R.S. (2008) Fisheries in Southeast Asia : challenges and opportunities. In : A. Pandya and E. Laipso (Eds). Transnational trends–Middle Eastern and Asian Views. Henry L. Stimson Center, Washington DC. pp. 171–182.

Gradoll, D. (2006) English next : Why global English may mean the end of "English as a foreign language". British Council, London. 128 pp.

Knight, J. (2003a) Updating the definition of internationalization. *International Higher Education*, **33**, 2–3. The Boston College Center for International Higher Education.

Knight, J. (2003b) Internationalization of higher education practices and priorities : 2003 IAU Survey Report. International Association of Universities, Paris. 26 pp.

Knight, J. (2008) Higher education in turmoil. The changing world of internationalization. Sense Publishers, Rotterdam. 256 pp.

Knight, J. (2012) Concepts, rationales, and interpretive frameworks in the internationalization of higher education. In : D. Deardorff, H. de Wit, J. Heyl, & T. Adams (Eds.), The SAGE handbook of international higher education. SAGE Publications, Inc., Thousand Oaks, CA.

Lymer, D., Funge–Smith, S. and Miao, W. (2010) Status and potential of fisheries and aquaculture in Asia and the Pacific 2010. FAO Regional Office for Asia and the Pacific, Bangkok. RAP Publication 2010/17. 85 pp.

McMahon, W.W. (2009) Higher learning, greater good : the private and social benefits of higher education. John Hopkins University Press, Baltimore. 432 pp.

Montgomery, S.L. (2013) Does science need a global language ? English and the future of research. The University of Chicago Press, Chicago. 240 pp.

Phillipson, R. (1992) Linguistic imperialism. Oxford University Press, London. 376 pp.

Sachs, J.D. (2009) Common wealth. Economics for a crowded planet. Penguin Books, New York. 386 pp.

Sakamoto, R. and Chapman, D.W. (Eds.) (2011) Cross–Border Partnerships in Higher Education, Strategies and Issues. Routledge, New York. 285 pp.

Stobutzki, I.C., Silvestre, G.T. and Garces, L.R. (2006) Key issues in coastal fisheries in South and Southeast Asia, outcomes of a regional initiative. *Fisheries Research*, **78**, 109–118.

United Nations Development Programme (2013) Human development report 2013. The rise of the south : human progress in a diverse world. United Nations Development Programme, New York. 202 pp.