

International Symposium on Aquaculture and Fisheries Education (ISAFE)

27 – 29 November 2009

Recommendations



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Background

A 3-hr brain storming session was conducted on 29th November 2009 as a part of the International Symposium on Aquaculture and Fisheries (ISAFE). The session was moderated by David Little and chaired by panellists Peter Edwards, Sena DeSilva, Meryl Williams, Dilip Kumar, Huang Shuolin and Ida Siason. The discussion session was participated by over two third of the total 140 symposium participants. The discussion was concentrated on the major four topics:

- 1: Curricula and courses
- 2: Academic Degrees, Quality and Certification
- 3: Collaboration and Partnership
- 4: Future Strategies

In addition to covering these four themes separately, cross-cutting issues across these thematic areas were discussed, for instances, mobility of students and scholars, declining attractiveness of the aquaculture and fisheries programs in terms of student applications and ennoblement, and the sustainability of academic programs.

Theme 1: Curricula and courses

Discussion on the curricula started from the question “Who is for who?” and Who is it all for?” Clarity on the role of the educational institution in the aquaculture and fisheries sector has many facets to which we must further expand on. There was useful discussion of whether to design our courses towards generalists vs. specialists, job seekers vs. job creators, and scientists vs. technicians.

The discussion on the need for generalist versus specialist education waxed and waned for so time, but general consensus concluded these key points on the issue:

- Undergraduate courses should take a more generalist theme. At least in the beginning, all students must have a firm foundation of general topics and issues before pursuing more specific interests. This background will also help them make connections with other disciplines as their studies narrow. Skills such as problem solving, critical analysis and thinking and ethics should be focused on heavily with undergraduate curricula more so than in high levels of education. Students must acknowledge that the solution will sometimes lie outside one’s own discipline. Additionally, elective courses during an undergraduate study are appealing because they provide exposure to different topics and specialities for future exploration.

- It is only after a solid foundation of general knowledge about the aquaculture and fisheries topic is built that more advanced, specialized study should begin. Graduate courses is where specializing in a field should generally occur, especially with research. There needs to be some clarity on the focus of different graduate programs, as not all will have identical curricula frameworks.
- These recommendations about generalization in the education system must be always taken with a grain of salt. The degree of specialization or generalization is ultimately up to the interests of each individual student. Extreme interests and talent on both ends of the spectrum will come through the educational system, and thus we must make relevant coursework readily available in the curricula in all levels of higher education, or at least have a suitable program or output for these types of students to fully discover and expand their potential.

Another question the educational institutions must continually reflect on is whether there is anything missing in the curricula. During our ISAFE roundtable discussion, it was briefly conferred that there needs to be more cultural, gender and social courses within aquaculture and fisheries education. Not enough time is directed at the social sciences aspect although within the working sector it consists of a large percentage of effort. Social problems (e.g. poverty, malnutrition, discrimination etc.), human resource management, leadership, mass communication, socio-political aspects and others were also not given attention within ISAFE's presentations itself. This reveals an obviously lacking voice in the multi-disciplinary educational system.

The variety of higher educational programs may also be lacking within our institutions. Is there enough variability of curricula for the local, small-scale farmer to the high technological doctoral candidate? Some argued that the education currently is not attractive or available to a wide enough group, and that we need more informal or web-based forms of education. Some believe that there is a portion of the population that would benefit, or actively desire, a more informal program catered to the general public. One solution offered was to look at our clients and their needs, then work backwards. How do we supply what they need? There are many successful alternatives for knowledge transfer using other than formal education e.g. industry-funded research and hobbyist interest (e.g. Aquaponics at UVI presented by Rakocy).

In regards to the scope of educational curricula across regions, both diversity and mobility are two essential components for global capacity-building. Sharing resources between regions is just as important as within them, and greater effort should be put into ensuring that far-reaching collaboration is not lost or weakened.

Defining target group and community for capacity building is important. Specific programs can be designed in the form of training. But generalist courses are needed to develop social

mobilization skill among the students. Aquacultures and fisheries should be considered in combination rather than separately. A balanced approach should be the main basis with combined forces would help in achieving the objectives/goals.

Theme 2: Academic Degrees, Quality and Certification

Current status of aquaculture and fisheries programs and degrees was tackled. Trends at many institutions show that the student applications and enrolment numbers in most of fisheries/aquaculture programs are decreasing. With that in mind, we must answer: which programs are working; which are not and why; where will future funds come from; and how can we get more resources?

One viewpoint discussed was that societal impacts should drive the educational curricula in order to have the largest impact on society and production – something to inevitably sell to the private sector. Current trends show a high demand in post-harvest innovation and employment, i.e. capital in private sector funding. To best harmonize with the post-educational system, we must recognize what future jobs will be. Some say aquaculture will become more specialized. Should we simply tailor our curricula to future job markets? Or is there a more artisanal value to education than supply and demand?

Awareness of aquaculture and fisheries education importance needs revitalization all around the world. There will be great demand for experts in the field in order to supply nutritious food to a skyrocketing population; this we all know – but how? More short courses and distance education are two ideas that deserve further exploration. Arranging study tours is another unorthodox but popular alternative for successful knowledge transfer. When formal education is slow to adapt with the current issues, these alternatives may provide a backdoor to facilitate education.

Currently, each country employs its own specific accreditation system to expedite regional level networking. Members of the session discussed the pros and cons of establishing an international or regional accreditation system versus more independently localized authorization. Pros included the increase ease of mobility and comparison across regions and review of success in education. Yet, some voiced their concern about losing the local nature and diversity of curricula/courses. For many countries, product is used locally and one would lose some local capacity if an all-encompassing standardized model was implemented that must fit dissimilar regions e.g. temperate and tropical environments. We need harmonization rather than standardization to allow diversity and innovation; what is best suited for each country is in the best interests of all others as well.

One of the ways to attract more students might be accreditation or certification by

independent bodies which is not happening in Fisheries/Aquaculture field. Only one paper about certification was presentation i.e. JABEE accreditation in Japan which is for undergraduate course. Academic programs certified in the form of outcome from the basic evaluate on for having basic requirements e.g. curricula, facilities and quality of instruction/instructors. Harmonization of curricula may be important for the purpose of accreditation and certification. Currently, credit transfer systems have been established e.g. WCTS / ECTS. But it is not common in Fisheries/Aquaculture. For this European institutions need international standard. Most of the national institutions are not applying (or not bothering to apply) these perhaps because of the hassles to go through the process of their own internal bureaucratic systems within the academic institution as well as the national level e.g. academic councils. On the other hand, credit transfers and accreditation are not taking place because of the limited mobility of students and academic staff within the region and between continents in Fisheries and Aquaculture is very limited. Erasmus Mundus program offered by EU / European institutions should be exploited.

Various regional and national networks are connecting the individuals and institutions in the region which could be used as medium for harmonization of curricula and maintaining the quality e.g. network of AIT / AARM alumni, majority serve in academic institutions. Similarly, within each country, we should create a platform or use current one if available e.g. Vietnamese Fisheries Network (ViFiNET) in Vietnam, for the purpose of regular dialogue and sharing of experiences for the improvement of the quality of academic degrees, programs, courses and delivery methods.

Theme 3: Collaboration and Partnership

There was unanimous consensus about establishing a Consortium led by institutions such as AIT and NACA involving all other major institutions offering the fisheries/aquaculture programs such as Auburn University, University of Stirling, Ghent University etc. and also international networks and platforms e.g. ASEM platform. A working body should be formed consisting of the individuals representing the institutions of the Consortium. It was also agreed that we need to understand the wants and needs and what exactly is available *before* any formal group body is conceived. There was also a heavy discussion on whether to revitalize the previous consortium which had its inception about a decade ago, yet had not gotten off the ground. Nevertheless, the information about the previous Consortium and its feedback need to be readdressed in order to move forward from that. The working body should decide whether to use or not the work of the previous consortium.

Effective protocol/goal for the consortium includes:

- Well-defined problem e.g. environmental or nutrition/poverty?
- Using good network or science implementation, e.g. Asia-Link program at AIT

- Looking at current issues, e.g. global warming, to bring to Consortium. Ideas from its conception are dated now. In a few years, global warming may be off the table, and they may change again.

The Consortium should be a mechanism for:

- cost-sharing/cost-effectiveness for a variety of projects and initiatives, e.g. ASEM as a model
- mobility (e.g. Erasmus Mundus)
- proper accreditation and curricula harmonization internationally or regionally e.g. Mekong region
- streamline the research so that the same research will not be repeated again by different institutions
- exchanging the information and sharing the experiences
- improving aquaculture and fisheries appeal to prospective students
- providing general class on current issues of wide-ranging topics to broaden knowledge outside of particular interest

In addition, there are several ways that may help this consortium come to fruition:

- Recent technological developments, i.e. video-conferencing, provide a cost-effective option for participation and exchange of expertise from across regions/continents. For example, NACA has seen success while employing this discussion format.
- One way to finance this coordination is for one organization to start so that others may take interest and follow gradually.

We still have questions on: How will we sell this thing? What is working? Are we missing anything? The mention of the private sector was another catalyst for much discussion about their place in this Consortium and our field in general. It was realized that participation of from the private sector is missing for discussions even though as educational institutions we must listen to our customer base. Yet, it was not clear exactly *who* we should invite (also running into sensitive issues of exclusivity is a real possibility – we don't want to turn anyone off). If they even want to attend was also up for discussion – comments went both ways. Do we need incentives to encourage the participation of “busy” businesspeople was a question.

There is confusion about the needs of the private sector, and vice versa the private sector is unsure of what the educational institutions need from them. It was also said that the marketing is inadequate and missing from the academic institutions. More linkages of communication need to be forged between these two realms. One successful method of effective communication between different interest groups is the “technology platforms” used in Europe, in which each sector (processors, pharmaceuticals, etc.) can form a conglomerate to lobby their efforts. Additionally, SHOU is seeing success from performing at least at local levels.

Discussion was also repeatedly focused on the purpose of the education itself. Whether it is merely educate the people or provide degrees and supply to the demand specially the need of the private sector? or is there any room for artisanal study to help the poor who need care from the states. Although, former has been increasingly important recently, the latter should not be forgotten.

We are experiencing low levels of enrolment across the board in the fisheries and aquaculture sectors in educational institutions. Prospective students are influenced by possible future incomes. They pay large tuitions and spend lots of time for continuing education and it must pay off. IT and finance jobs are more popular, and generally, the best students are moving into these fields. We must effectively convey that A&F is a business and can make large salaries as well. We need to showcase these post-graduate stories better.

Students are also looking for practically. They want to be marketable for international mobility in order to earn more money abroad, or perhaps just be able to live outside their home country, e.g. Brunei nationals like to study abroad in UK, not AIT, because they look at rank listings though these rankings are based on research outputs, not quality of teaching and applicability in the future. But how students know beforehand is a question. An example was given with the case of a girl student who did not choose to come to AIT degree at first thinking that it is an Asian degree and degree in Aquaculture. After returning back to her home country and having visited to AIT, she was asking whether she could apply for AIT aquaculture program. This shows that most of us might not have been able to do adequate marketing.

There are several other possible reasons for the decline and possible solutions:

- Aquaculture and fisheries has this preconceived image of being “dirty” – fuelled by media?
- Students don't necessarily know the importance of aquatic ecosystems – need education to start/focus more on this education at a young age to foster interest
- Students look for adaptability in the business (through generalist education)
- Poor program packaging/selling quality – need more effective marketing

There is a relation between the demand for particular education/degrees and the business boom. For example, the Philippines saw a sharp student enrolment increase following the shrimp boom in mid 1990s. Also in Thailand might have been the same – high enrolment / demand during mid-80s until mid-90. So clearly, students are motivated by job placement availability. Should we be looking at the private sector demands to redesign our curricula and thus find higher enrolment?

The discussion turned to the topic of extension programs from educational institutions. These programs are effective tools for further, efficient capacity building for rapidly-

changing times. Are there enough of these programs or enough variety (concerning topic, time span, location, budget)? Nepal (IAAS), and RIA1 and UAF (Vietnam) are success stories. The increase in student enrolment at IAAS was mainly due to the availability of research fund while at UAF (Vietnam) was due to the combination of increased job assurance from the private sector.

Theme 4: Future Strategy

Looking ahead, the continuation of ISAFE is a distinct possibility. Some suggested every four years, but more negotiations are needed to confirm both an appropriate interval and ISAFE's overall future. Decision should rest on the Consortium to be established.

Consortium logistics were discussed, including wrapping up and extrapolating recommendations from this ISAFE, continuing drafts for the Consortium, and really getting the ball rolling on who is going to take an active role in it, what roles and tasks are needed and how to properly delegate them. Although, the Consortium is the network of institutions, role of individuals is more important. We need the persons to take this forward who are dedicated and ready to take actions as soon as possible. We cannot wait another ten years. A working body / committee has been agreed to establish involving the individuals from major institutions.

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