

TOWARD THE PROFESSIONALIZATION OF AQUACULTURE: IS THERE A NEED FOR CERTIFIED PROFESSIONAL AQUACULTURISTS?

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Aquaculture is expected to be the primary source of seafood and to continue to play a major role in wealth generation, food security, human health and poverty alleviation in the future, especially in developing countries (FAO 2014). However, unregulated aquaculture development can generate more problems through social and environmental concerns than it may solve (Naylor *et al.* 2000). It is, thus, assumed that future growth in global aquaculture to satisfy the ever-increasing world seafood demand will be achieved only if aquaculture is developed in a responsible manner by true professionals (Williams *et al.* 2000, Cressey 2009, Brummett 2013). The purpose of this article is to initiate discussion on the need to officially define aquaculture as a distinct profession with experts with specific, certified aquaculture knowledge and skills as part of the effort to secure seafood for 9 billion people by 2050.

To describe the potential benefits of the professionalization of aquaculture, I will first elaborate on the limits of farm certification, then present some general approaches on professions and professional certifications and finally describe the prospects for certification of aquaculture professionals.

THE LIMITS OF FARM CERTIFICATION

Farm certification is a current available framework to ensure environmental sustainability and social responsibility of aquaculture, while maintaining its economic sustainability. Farm certification is performed according to standards developed by independent organizations, such as the Global Aquaculture Alliance, Aquaculture Stewardship Council, and ISO 14001 Environmental Management Systems on the basis of established economic, environmental and social principles and standards. These standards are adaptable to specific local and national regulatory systems, norms and values to support responsible aquaculture production on existing individual farms. Farm certification in aquaculture can also provide a market incentive to farmers, inasmuch as people are now, more than ever, concerned about the sustainability of production and traceability of the food they eat, especially in developed countries.

THERE IS A NEED FOR A NEW INSTITUTIONAL ARRANGEMENT THAT SPREADS PROFESSIONALISM WITHIN AQUACULTURE. THIS COULD BE ACHIEVED THROUGH THE ESTABLISHMENT OF AQUACULTURE AS A DISTINCT REGISTERED PROFESSION. PROFESSIONAL CERTIFICATION VALIDATES THE EDUCATION AND TRAINING OF PROFESSIONALS. THE PROFESSIONALIZATION OF AQUACULTURE MIGHT INVOLVE THE ESTABLISHMENT OF A BOARD THAT REGULATES AND GUIDES AQUACULTURE PROFESSIONALS THROUGH THE PROFESSIONAL CERTIFICATION PROCESS. AQUACULTURE SOCIETIES, INCLUDING WAS, COULD ESTABLISH A “BOARD OF AQUACULTURE PROFESSIONALS” THAT WOULD OFFICIALLY GUIDE AQUACULTURE PROFESSIONALS TO ENSURE THAT AQUACULTURE IS PRACTICED WITH INTEGRITY AND THAT CERTIFIED PROFESSIONAL AQUACULTURISTS USE EXISTING SCIENTIFIC AND TECHNOLOGICAL KNOWLEDGE TO FIND RELEVANT ECONOMICALLY, ENVIRONMENTALLY AND SOCIALLY SUSTAINABLE SOLUTIONS TO THE CURRENT AND FUTURE CHALLENGES OF GLOBAL AQUACULTURE GROWTH.

Nevertheless, not all fish farms in the world can be certified because certification is voluntary and involves a cost to the producer. Thus, aquaculture farms seeking certification are usually big ventures, while the major part of global aquaculture production is achieved by small-scale aquaculture producers in developing countries. Hence, unless small-scale producers see more market opportunities and financial returns from investing already limited financial resources for farm certification, this will only contribute to the sustainability of aquaculture in a partial way, inasmuch as the pooled environmental impact of numerous small-scale aquaculture farms at the global level is important (Brummett 2013).

Hence, to complement the current farm certification systems and tentatively reduce

investment risks in the aquaculture industry, there is a need for a new institutional arrangement that spreads professionalism within aquaculture. This could be achieved through the establishment of aquaculture as a distinct registered profession.

GENERAL APPROACHES ON PROFESSIONS AND PROFESSIONAL CERTIFICATIONS

A profession is an occupation that requires a worker with specialized training and experience to perform one type of work or several specific tasks related to that work. Such a worker is called a professional. A profession is created to serve the needs of the society for a specific type of work or group of related work; hence a profession is specialized and allows professionals with specific knowledge and hands-on experience in a discipline to distinguish themselves from other “non-professional” workers by providing the best service possible to society.

A professional can be unregistered, that is people deliberately use a professional title without being certified by any official professional board. A typical example in this category is “aquaculturist.” Currently any person growing aquatic animals or plants can claim to be an aquaculturist, irrespective of training and experience in the field of aquaculture. Further, a professional can be registered, that is the professional has a professional board

that has been officially mandated or sanctioned by the national or state office of professions. Such a board certifies its professionals following specific criteria in accordance with national and state laws and regulations. Irrespective of country, examples of registered professions include lawyers, medical doctors, engineers and agronomists.

Professional certification validates the education and training of professionals, and insures the continuing training of these certified professionals throughout their career. Professional certification may increase professional credibility because it suggests that the certified professional knows what s/he is talking about, is the right person for the job and works with integrity. Professional certification may thus create trust and confidence in society, employers and investors.

A certified professional bears a professional title that supports her/her professional competence and integrity. To maintain the status of his/her professional certification as valid, a professional should demonstrate continuing work and training, which are usually evaluated by the certifying professional board on a regular basis (biennially or quinquennially for instance). In this manner, the professional board keeps control of the education, training and professional experience of its certified professionals.

CERTIFIED PROFESSIONAL AQUACULTURIST?

Despite the fact that anyone can produce aquatic organisms and scientists from all disciplines can contribute to aquaculture research and development, not every aquatic farmer or aquatic scientist should automatically be considered to be an aquaculture specialist or aquaculturist. By analogy, a botanist is not automatically an agronomist, nor a holder of a degree in medical science a medical doctor, nor a holder of law degree a lawyer. Moreover, although it is not expected that only people who have received formal education and training in aquaculture become aquaculture producers, it is clear that the sustainable development of aquaculture can be supported by innovations performed by true aquaculture professionals. In addition, investors might be more inclined to provide funds for aquaculture projects involving certified aquaculturists. In this context, the professionalization of aquaculture appears to be more of a need than an option for sustainable development of the aquaculture sector.

The benefits of professional aquaculture certification to the public and for sustainable development of the aquaculture sector, in combination with farm certification, can be anticipated by making an analogy to terrestrial agriculture. In the western hemisphere for instance, a terrestrial agriculture farm is voluntarily certified by an independent private certifying organization (the ISO, for example), but the agricultural expert working with the farm as an employee, consultant or government support officer is exclusively a certified professional agronomist. In this manner, the integrity and

sustainability of the agricultural sector is supported by certified professional agronomists.

The professionalization of aquaculture might involve the establishment of a professional board that regulates and guides aquaculture professionals through the professional certification process. The American Fisheries Society (AFS), which includes the Fish Culture Section, currently offers professional fisheries certification. However, this certification is barely recognized by any fisheries sector, possibly because it has no specific academic standing. Auburn University operates a Certification for Aquaculture Professionals program, but very few aquaculture job postings currently require this certification. Nevertheless, aquaculture societies, including the World Aquaculture Society, could build on the experience of the AFS and Auburn University to establish a "Board of Aquaculture Professionals." Such a board would officially guide aquaculture professionals to ensure that aquaculture is practiced with integrity and that certified professional aquaculturists use existing scientific and technological knowledge to find relevant economically, environmentally and socially sustainable solutions to the current and future challenges of global aquaculture growth.

Notes

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