

## The Controverted Issue of Small-Scale Rural Aquaculture in the World Invitation to Debate

Luis Remedios Hernandez\*

Department of Aquaculture and Industrial Fishing, Cuban University of Veterinary Medicine, Cuba

### ABSTRACT

In the current context of third world aquaculture, not as much a topic has been debated as the one that refers to Small-Scale Rural Aquaculture (SSRA). Numerous forums, workshops, symposia, etc. They have been organized in different years and in any of the regions that FAO subdivides the world to deal with the fact of the emergence, development and generalization of a primary aquaculture, capable of feeding the dispossessed masses, which in increasing numbers suffer from undernourishment. Numerous brochures, manuals, guides and even books have been published to "teach how to do aquaculture at low cost".

Without ruling out that this document constitutes one more in the long list of those that have preceded it, we intend here a little to "flesh out" in our personal judgment, the causes that have caused and are causing the inoperative programs to develop the SSRA, mainly in countries from Latin America and Africa.

**Keywords:** Aquaculture; Marine culture; Alleviating poverty; Dispossessed masses

## INTRODUCTION

### The true distribution of the aquaculture product on a global scale.

The slogan that aquaculture is called to be the infallible productive activity to increase the levels of food production on a planetary scale is much vaunted. However, by delving into current trends in aquaculture and the lines where its development manifests itself, it invites the understanding that these production volumes are not the ones that are going to feed the growing number of humans on Earth. Let's analyze the following data:

The projections presented in the FAO Agriculture publication for 2010 (FAO, 1996) indicated that to maintain the current per capita level of fish consumption of 13 kg / year for 2010 (taking into account that the world population could reach to 7032. Million inhabitants in that year), 91 million tons of fish would be needed, of which aquaculture would contribute with 31 million tons.

According the predictions that are made, assuming that aquaculture grows at a rate of 5% per year, a production for 2010 of only 47 million tons is estimated, (16 million higher than the

fixed years before), which is actually 51% of the necessary figure. If we also consider that 47% of production is achieved in China and that practically all the fish produced there is consumed, then there is very little margin for distribution to the rest of the world's population. Let us also consider that Latin America contributes approximately 1.2% of world production, with a population of over 450 million inhabitants (approximately 7.5% of the world population), (FAO, 1996). Another aspect to consider is the increase in aquaculture in shrimp farming and marine culture, production that is aimed at an elite market, since it is illusory to think that, the poor peoples and less poor peoples of the world can be fed with shrimp or salmon from Chile.

Some have argued that shrimp farming increases the income of the workers who are linked to it, but in reality, more is lost with the occupation of the land, the evictions for this concept and the change of culture that this forces, without count environmental impacts to coastal areas. In 1982, slightly less than 84,000 tons of shrimp were produced, and at the end of 1995, productions reached 712,000 tons, thus experiencing a growth of almost 9 times.

**Corresponding author:** Luis Remedios Hernandez, Department of Aquaculture and Industrial Fishing, Cuban University of Veterinary Medicine, Cuba; E-mail: lremedioshernandez@gmail.com

**Received date:** April 26, 2021; **Accepted date:** May 10, 2021; **Published date:** May 17, 2021

**Citation:** Hernandez L R (2021) The Controverted Issue of Small-Scale Rural Aquaculture in the World Invitation to Debate. J Aqua Res Dev. 12:636.

**Copyright:** ©2021 Hernandez L R. This is an open-access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

Global farmed shrimp production reached almost 4 million tons in 2018, an increase of 3 to 5 percent from 2017

The farmed shrimp industry is expected to continue to grow in the coming years. According to Martínez-Espinosa (1999), 82% of total aquaculture occurs in Low Income Countries with a food deficit, but it is necessary to specify that this aquaculture, as noted above, is not precisely aimed at covering the feeding of their low-income populations, but in participation in the international market. For example, some Asian countries produced more than 1.5 million tons of shrimp for export during 1997. In 2017, the productions of that region were approximately 3.7 million tons (Figure 1).



**Figure 1:** Shrimp production by region. Sources: FAO.

As we know, the distribution of fish produced in the world is not equitable, the Japanese, for example, consume over 70 kg per capita per year, however, the average per capita per year in Latin America and the Caribbean is approximately 0.45 kg and even so, it is not equitable. Only the analyzes of aquaculture statistics with a consistent perspective show that the current trend in aquaculture is not precisely to cover the food needs of the poorest, but rather to cover the needs of the market, mainly of developed countries. This reality is fully aware in the scientific and non-scientific fields. For this reason, it is considered that the fish of the poor is only what the poor can produce for themselves. But here is the crucial dilemma: How to make known or convince the poor that aquaculture, according to the analysis of the non-poor, will be the one that will partly solve their food needs? It is too complex a subject to be digested in a social context, where, not only food constitutes the main problem of poverty.

Martínez (2000) citing Edwards (1999) states that the latter tries to demonstrate that aquaculture is a technique capable of alleviating poverty!!

Let's analyze this question:

The analysis of non-business aquaculture practiced by "humble people" must be analyzed from a social rather than a technical perspective. An aquaculture of this type requires a multifaceted interrelation analysis, this reflection should allow us to understand the interconnections that in the social, economic, political, environmental and even psychological order, surround and gravitate on man as a subject and on aquaculture as an object.

The man is debated in heterogeneous conditions, in which the aspects mentioned above influence, and depending on these,

this will be his way of thinking and acting. Before continuing with the analyzes that we intend to carry out on these key and necessary aspects, prior to the attempts to explain the relative failures of the SSRA, we will now define the concept [1].

According to Edwards and Demaine (1997): "Rural aquaculture is the cultivation of aquatic organisms by family groups through extensive or semi-intensive farming systems for self-consumption or partial commercialization" [2].

According to Martínez-Espinosa (1992; 1994): "Aquaculture of the poorest: (Very low production cost). It largely constitutes what has been called subsistence aquaculture, but it also includes producers who do not consume everything what they produce and market a small part in a fairly simple way (neighbors, small farm markets, small caverns) [3].

Aquaculture of the less poor: (Low or medium costs and production). Its users have a certain degree of financial solvency and business capacity. They are middle peasants or ranchers who add aquaculture to the complex of agricultural activities that they normally practice on their farm. Even though the entire product may not be marketed, it is assumed that the activity has to be profitable according to the cost / benefit analysis, so that it can be included in this category" [4].

Edwards defines the object of the activity (aquaculture as such) and Martínez the subject (man), Martínez does not focus only on the activity, but incorporates elements of a social and economic nature, making, as he himself catalogs, a definition / description. The problem with Martínez's definition is that he subdivides the SSRA and when explaining it, it introduces two concepts that are also necessary to interpret: poorer and less poor [5].

These two concepts are relative to each other and to themselves. Explaining ourselves better, we would have to know and understand the poor concept in the space-time context in which we want to place it. We must also accept that the poor is nothing more than the effect of poverty, therefore, let us first try to interpret this concept to understand the other [6].

"Poverty is the accentuated dissatisfaction of the basic material and spiritual needs referred to man, for his support and that of his family, in the historical-social framework of the society in which he lives. Therefore, poor is one deprived of basic needs subsistence to a lesser or greater degree, due to the distribution of work and wealth of the society in which he lives" [7].

Well, in our personal judgment and criteria, this is the starting point for the analysis. What is important about this concept is what refers to the historical-social framework in which the man in question develops or lives. Therefore, poverty is relative in space and time. Therefore, the search for the fundamental reasons that have caused the SSRA not to be definitively constituted as a food alternative for the poorest peasant population should be directed in that direction, if it is evidently shown as the most logical reason to solve this crucial and capital food problem [8].

The problem lies in the fact that small-scale rural aquaculture has been interpreted from technical positions, (at a distance or remote control) and very little in practice. Aquaculture cannot

be indicated to the poor or less poor as a medical prescription, as a panacea that will rid them of their nutritional ills and bring them economic prosperity. The SSRA cannot be seen as an isolated activity without connections with the specific political, cultural and social environment of each community itself, even with environmental aspects. The method consists of connecting, inserting oneself in the community in question, living in it, feeling permeated by the real problems that gravitate to the community and deciding in which direction to take aquaculture, and very importantly, if this is really a way to apply.

## CONCLUSION

The specialist is given the technical knowledge of the activity and the one we have decided to call poor must be convinced of how aquaculture can integrate into the other food-producing or non-food-producing activities that surround it and that make up its productive world.

The SSRA can continue to be debated in an academic way in the forums, expressing the agreements and definitions on white paper, which are read in technical circles or are part of the bibliography stored on shelves or drawers, places where they do not really attend, nor are they read by those that they must execute it, as long as this is the case, it will remain as one more attempt to improve the nutritional conditions of the great mass

that today suffers from hunger in the world and which can no longer wait for technical formulas to satisfy their pressing needs for subsistence .

## REFERENCES

1. Edwards P. Aquaculture and Poverty: Past, Present and Future Prospects of Impact.FAO. 1999;1-26.
2. Biggs SD. Farming systems research and rural poverty: relationships between context and content. Agri Sys. 1995;47:161-174.
3. Cai YL, Smit B. Sustainability in agriculture: a general review. Agri Ecos Env. 1994;49:299-307.
4. Edwards PH, Demaine N, Turongruang D. Sustainable Aquaculture for Small-scale Farmers: Need for a Balanced Model, Outlook on Agriculture. Geog Urban Stud Plan. 1996;25(1):19-26.
5. Edwards PC. An assessment of the role of buffalo manure for pond culture of tilapia on-station experiment. Aquaculture. 1994;126(1-2):107-108.
6. Lightfoot C. Aquaculture and sustainability through integrated resources management. Outlook on Agriculture. 1993;22:143-150.
7. Martinez-Espinosa M. Development of type II rural aquaculture in Latin America. FAO Aqua. 1995;11:6-10.
8. Molnar JJ, Schwartz NB. Integrated aquaculture development: sociological issues in the co-operative management of community fishponds, Sociologia Ruralis. 1985;15(1):61-80.