

Saving the Farmers and Strengthening Food Security by a Promising R cum F Agriculture

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Abstract

This paper aims towards a new idea in the field of agriculture for the betterment of Farmers and subsequently the outcome will be much fruitful to the people. R cum F culture can generate additional net returns to the farmers. We won't let them die by committing suicide anymore. Farming is not just a job, it's a way of Life to them and the product which they cultivate and produce is what we need three times a Day to Live (It's the Food). If we can pay a Doctor for keeping us better, then why not we think about a Farmer who keeps us alive and healthy by their hard sweating work. R cum F culture i.e., Rice cum fish culture is the culture of Rice and fish in the same piece of land together. Production of fish as an additional crop is major boost to the farmer and to the people, so as to the state economy and strengthening food security of a nation ultimately. The farmer gets additional food and income in the form of fish. The rice field is converted into a temporary fish pond after the harvest. He can feed to his family and he can sell fish and can earn money in return for his betterment of financial stability. Both Rice and Fish as Food are the outcomes of this R cum F culture. Rice fields may also serve as fish nurseries to grow fry into fingerlings. If a farmer gets success, we get food. This paper shows a promising step which can be applied all over the world in the field of agriculture which is nothing but the science, art, or occupation concerned with cultivating land, raising crops, and feeding, breeding, and raising livestock; farming for livelihood of all present on planet earth.

Keywords: R cum F agriculture; Rice and fish as outcome; Farming; Saving the farmers; Strengthening; Food security; Livelihood

Introduction

R cum F Agriculture can generate additional net returns to the farmers. We won't let them die anymore in our State. Farming is not just a job, It's a way of Life to them and the product which they cultivate and produce, is what we need three times a Day to Live (It's the Food). If we can pay a Doctor for keeping us better, then why not we think about a Farmer who keeps us alive and healthy by their hard sweating work. Rice and fish culture is the culture of Rice and fish in the same piece of land (Figure 1). Production of fish as an additional crop is major boost to the farmer and to the people so as to the state economy and strengthening

food security [1-3]. The farmer gets additional food and income in the form of fish [4,5]. The rice field is converted into a temporary fish pond after the harvest. Rice is benefited in the form of additional nutrients which come from fish excreta. Fish stir up soil nutrients making them more available for rice [6-8]. Integrated rice-fish farming results in mutual benefit to both rice and fish. Nitrogen which is an essential plant nutrient is also well provided by the fish excreta [8-10]. In addition, the aquatic weeds of rice also get reduced due to fish presence.

Another main aspect of this idea is to save the farmers and save the state so as the nation, the farmer himself gets benefited from this type of agriculture. If a farmer gets success, we get Food [11,12]. This idea, if a farmer applies, then a farmer gets additional food and income in the form of fish. Farmer will be financially stable, anyhow after the yield, less crop failure, very less chance of low productivity. Farmer will not be in indebtedness condition, subsequently they can be strong enough. At least not to lose his life and commit Suicide [12-14], (Figures 1-3). Fish, he can feed to his family and he can sell fish and can earn money in return for his betterment of financial stability. Both Rice and Fish as Food are the outcomes of this RCF culture. Food security of the state will strengthen for sure. Rice fields may also serve as fish nurseries to grow fry into fingerlings. The fingerlings, if and when produced in large quantities, may either be sold or stocked in production ponds for obtaining better fish yield under composite fish culture.



Figure 1: Shows both Rice and fish can be cultivated in same piece of land.

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Objectives and advantages by doing R cum F culture

Integrated rice-fish farming results in mutual benefit to both rice and fish [1-3]. Economical utilization of land can be achieved. Little extra labour is required. Rice is benefited in the form of additional nutrients which come from fish excreta. Fish stir up soil nutrients making them more available for rice. Nitrogen which is an essential plant nutrient being a component of amino acids, nucleic acids, nucleotides, chlorophyll, enzymes, and hormones is well achieved from the Fish faecal matter [7,8,10]. The Molluscs, insects which are harmful to Rice plants are controlled and killed by Fishes. Fish wastes including uneaten feeds add fertility to the soil too. In addition, the aquatic weeds of rice also gets reduced due to fish presence. In turn, fish gets benefit in the form of favourable micro climate due to presence of rice plants. However, rice requires a majority of nutrients in the form of inorganic fertilizers whereas fish needs nutrients in the form of organic form. The formulation strategies for fish and rice with the usage of Organic/ inorganic fertilizers and supplements need to be scaled up. A farmer gets additional food and income in the form of fish [11]. So ultimately, very reduced risk of crop failure resulting from RCF culture and less chance of, the farmer gets harassed and commit suicide.

Implementation

By the normal conventional way which will be very less cost effective, trenches can be made in some proper distances within the rice field. Trenches gives following advantages :

- A good small comfortable niche environment for the fish to live.
- A passageway providing fish with better access for feeding in the rice field.
- As a catch basin during harvest.
- Implementation of such techniques is very rare and unaware, unknown among farmers in our nation India and around the globe too.
- This idea, if a farmer applies, then a farmer gets additional food and income in the form of fish.
- Farmer will be financially stable, anyhow after the yield, less crop failure, very less chance of low productivity.
- Farmer will not be in indebtedness condition, subsequently they can be strong enough. At least not to lose his life and commit Suicide. After all farming is not just a job. It's a way of life (Figure 2).

Innovation

A farmer will use this innovation, let's help and support farmers in doing such RCF agriculture, and obviously we will see more good Net Returns. Let's Begin. And let's prevent Farmers committing suicide (Figure 3).

Results

- First very importantly, the farmer himself gets benefited from this type of agriculture.
- If a farmer gets success, we get food.
- Both Rice and Fish as Food are the outcomes of this RCF culture (Figure 4).
- Fish, He can feed to his family and he can sell fish and can earn Money in return for his betterment of financial stability.
- Food security of the State will strengthen for sure.
- Ultimately the economic health of the state will rise and by Fish selling and fish supplying the commercial value of the markets in area wise of the state will also get reinforced and more static with always growing signs in Business (Figure 5).

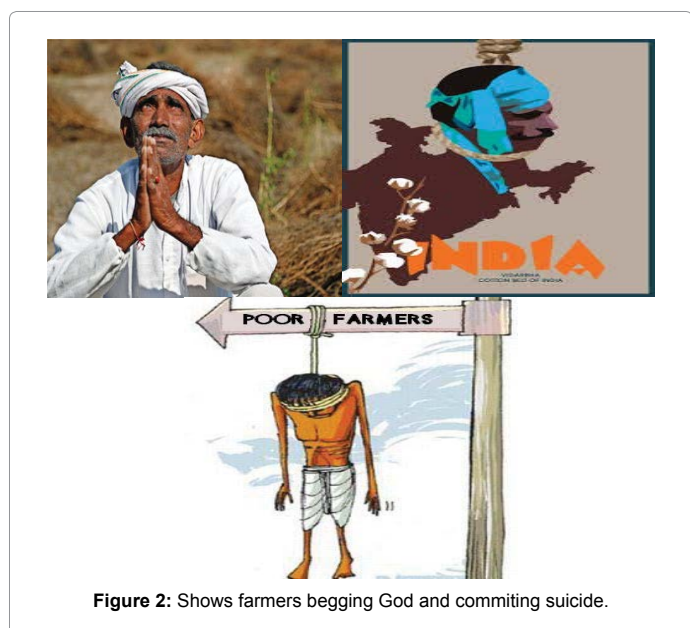


Figure 2: Shows farmers begging God and committing suicide.

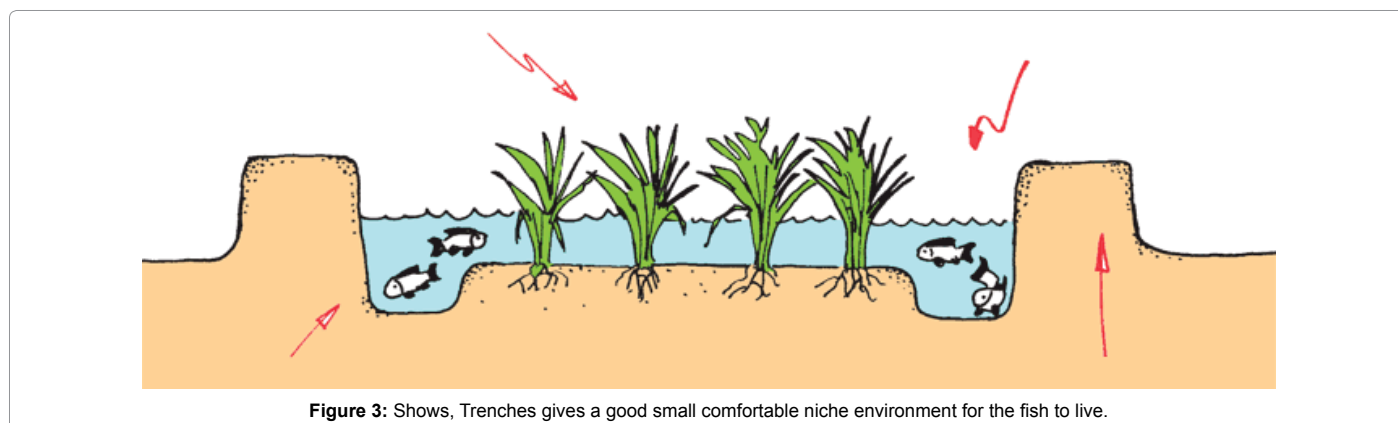


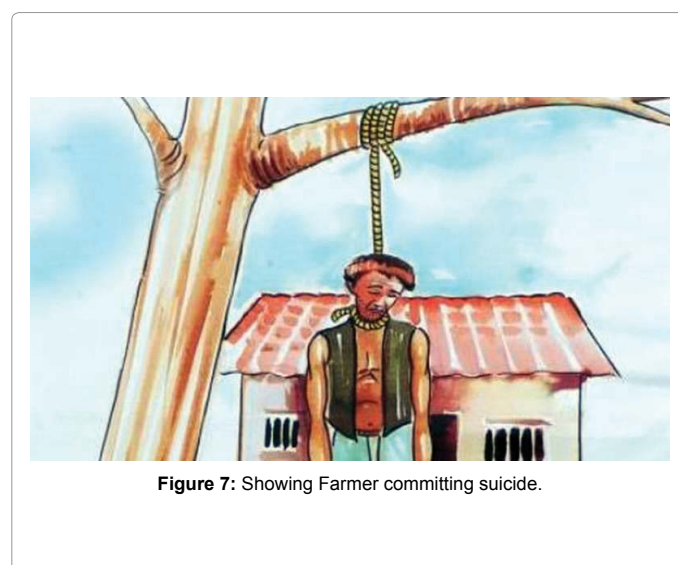
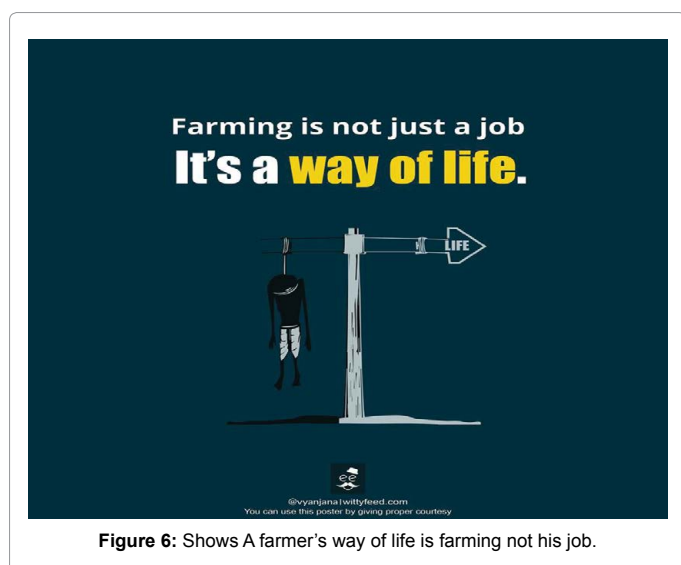
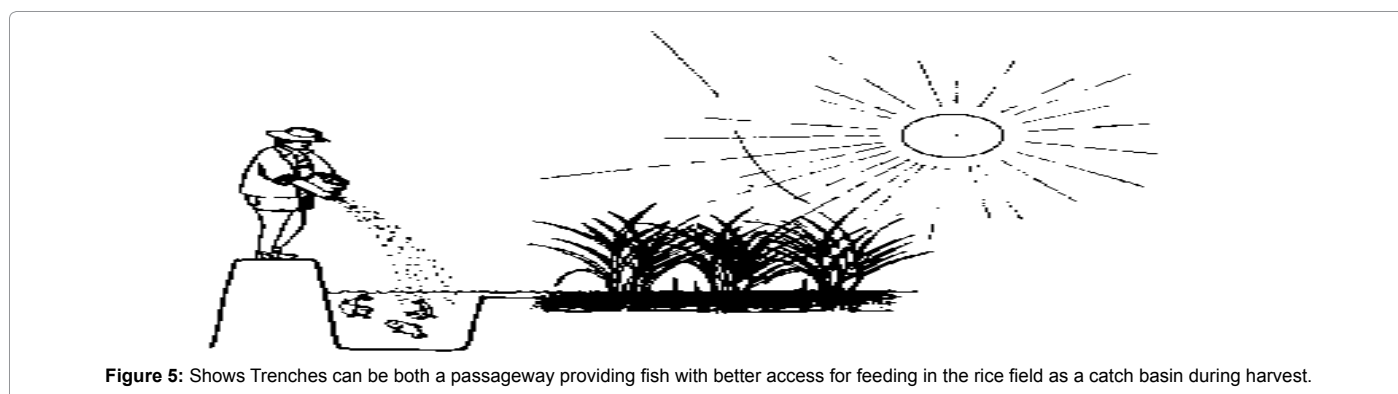
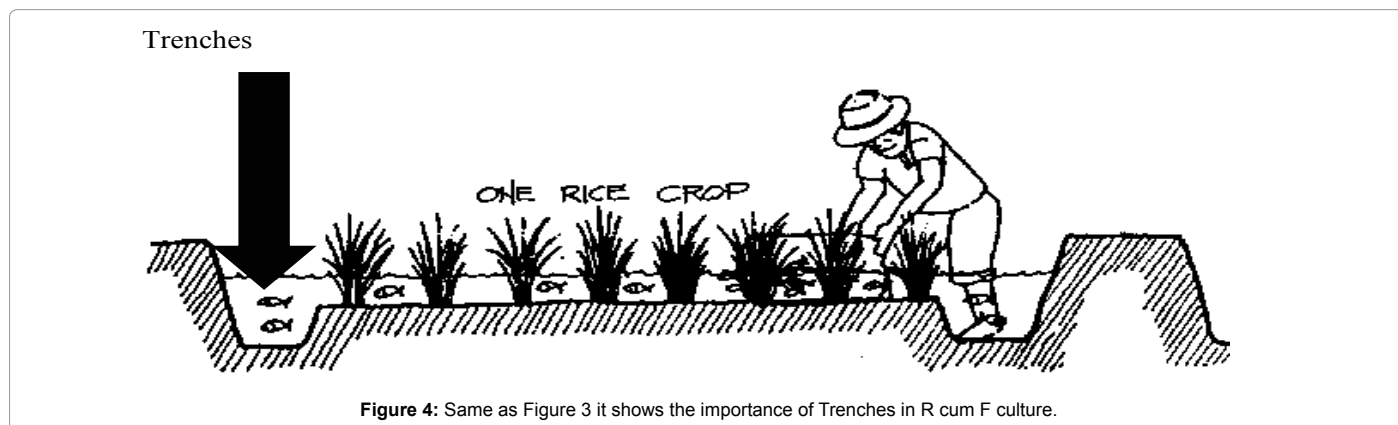
Figure 3: Shows, Trenches gives a good small comfortable niche environment for the fish to live.

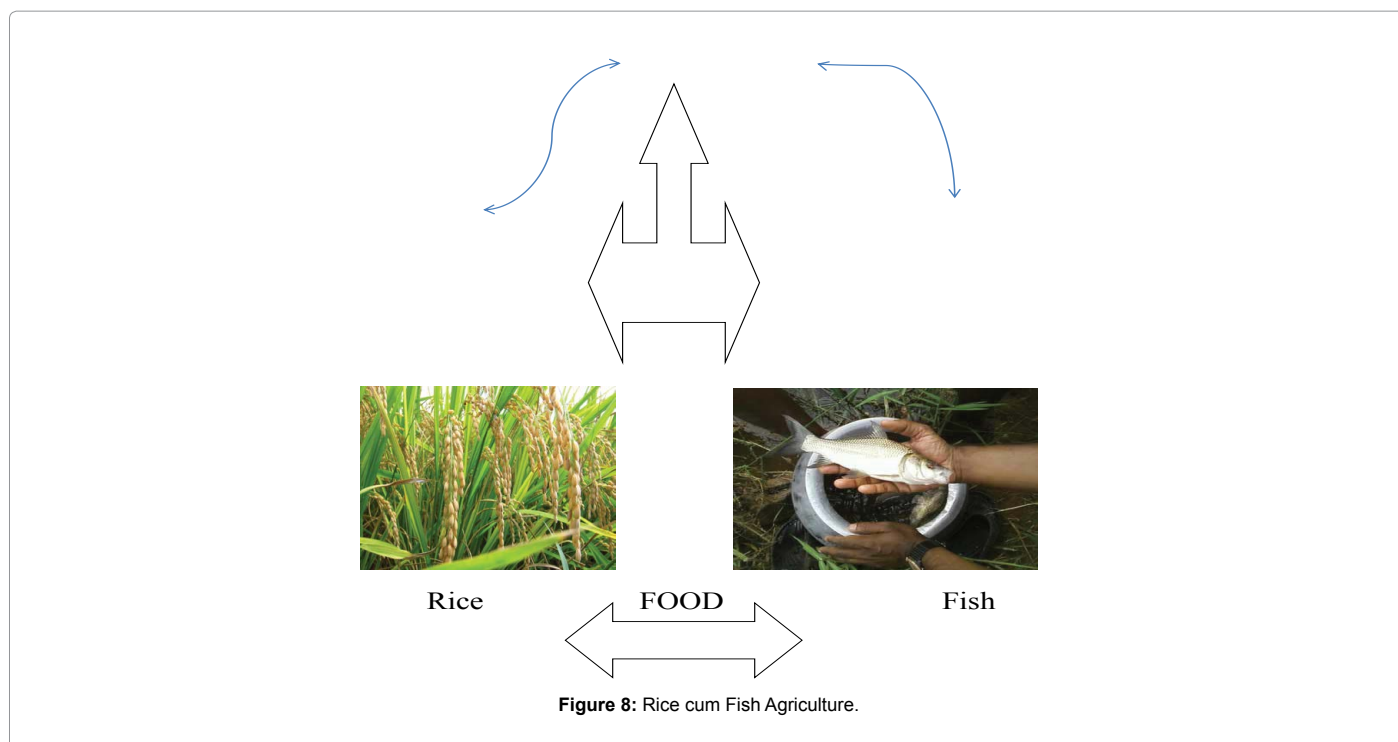
Sustainability

No doubt, it is absolutely a clear and easy way of Agriculture. It is highly sustainable from the point of view of agriculture. Rice fields may also serve as fish nurseries to grow fry into fingerlings (Figures 6 and 7). The fingerlings, if and when produced in large quantities, may either be sold or stocked in production ponds for obtaining better fish yield under composite fish culture.

Replicability and Scaling Up

The formulation strategies for fish culture like usage of pesticides/insecticides/fertilizers needs to be addressed properly first, to prevent any loss in Fish culture (Figure 8). Organic/inorganic fertilizers and supplements need to be scaled up, where the balanced quantity increases the production yield without badly affecting the crops.





Employment

A farmer himself when learns this specific idea of agriculture, then he himself can be a technical advisor to the other farmers who are less educated in the area or his village. He can have a post and employed as Technical advisor in his block. Else with contingency plan, an educated fresher also can be employed to advise all the farmers in a particular area for the betterment of applying such technique while cultivating Rice.

Conclusion

In conclusion, integrated fish farming is a combination of fish culture alongside with rice crop. This system has an advantage over fish farming alone. Integrated fish farming is the blending of various compatible agricultural enterprises into a functional or unified farming system for the purpose of sustainability and it varies from one area to another in terms of production combination, rates and sizes. Women/youth being the most vibrant group of people can be too involved in this system. It plays a very important role in many aspects of women/youth development and empowerment and is more profitable than a unitary system. It has a capacity of making more food available thus enhancing food security. Besides, it provides employment, thus alleviating poverty and enhancing the economic status of the rural populace. The farmer gets additional food and income in the form of fish by which he will be in a financially stable condition, less in debt or loans, and he can feed his family in a healthy way. So ultimately, very reduced risk of zero crop outcome, after a period of culture that is specifically here in resulting from R Cum F culture and less chance of the farmer getting harassed and committing suicide.

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