Popularization of Azolla Cultivation for Economic and Ecological Advantages

India
Meenakshi Sundram
Project Summary

Concise Summary: Help us pitch this solution! Provide an explanation within 3-4 short sentences.

Azolla is a water fern that can be grown both at farmstead and homestead by resource poor farmers for meeting organic cattle feed supplement in addition to use azolla as Dual Culture in rice farming and bio-manure for crops, vegetables and plants for environmental conservation and economic returns.

About You

Location
Project Street Address
Murali Complex, Gandhiji Main Street
Project City
Madurai
Project Province/State
Tamil Nadu
Project Postal/Zip Code
625006
Project Country

Your idea

Country your work focuses on:
India.
Website URL
http://www.index.org.in
YouTube Upload
What stage is your project in?
Operating for 1-5 years
What is the average monthly household income in your target community, in US Dollars?
<$50

Innovation

Describe your idea in fewer than 50 words.
Azolla is a water fern that can be grown both at farmstead and homestead by resource poor farmers for meeting organic cattle feed supplement in addition to use azolla as Dual Culture in rice farming and bio-manure for crops, vegetables and plants for environmental conservation and economic returns.

What makes your idea unique?

Azolla is a water fern, known also as duck-weed, which has been proved as sustainable source for the poor and disadvantaged women and men farmers in their hardships of finding viable feed for the farm animals, and enriched bio-manure in rice farming. Women and young girls [adolescent] often spend a great deal of time followed by drudgery of collecting the fodder for the animals. The cost involved in purchase of chemical and concentrated feeds are not only prohibitively expensive, but these form threats to local biodiversity conservation. Existing feed sources such as farm wastes and dwarf paddy varieties lack essentially the adequate amount of nutrition and calorific values. Poor rural village families who are already facing food insecurity positions lose interests in animal rising. If this trend exists to continue, Nature-bound village harmony will disappear followed by social, economic and cultural deprivation in the long run. Azolla produces abundant biomass, and has 5-7% protein respiration abilities,
offer cost-effective solutions for fodder security [more than 30-40% cost saving] and significantly reduces costs towards chemical farming. Nature Conservation should take into consideration of conservation education in the first instance whilst providing space and scope for sustainable resources use and management in order to ensure livelihood security.

**What is your area of work? (Please check as many as apply.)**


**What impact have you had?**

Begun with 20 resource poor farmers, the initiative had expanded to a level where 200 farmers benefited, and so far, 10 acres of rice fields were covered under Azolla Dual Culture. Over 10 Civil Society Institutions had benefited through the training and technical facilitations rendered.

**Describe the primary problem(s) that your project is addressing.**

Basically, women in rural setting spend great deal of time in drudgery fodder collection. Fodder is a declining and scarce resource, which poses environmental challenges. Chemical and concentrated feed sources available in urban markets are burdensome economically, where resource limited rural farmers find hardships in procurement. Introduced rice farming in Tamil Nadu often involves prohibitively expensive higher external inputs, economically unviable and ecologically unsustainable. This is where azolla cultivation has multi-functional advantages to address the key problems as described.

**Describe the steps that your organization is taking to make your project successful.**

The Social Innovator currently aims to generate the minimum of US$20000 to make this Project on the ground successful. The Social Innovator suggests the following steps that are critical such as the [1] Setting up of Mist Chambers for cultivation and conservation of 3 varieties of azolla ferns, and [2] starting Azolla Seed Production and [3] undertaking possible researches on production of Blue Green algae [BGA] for the wider distribution to farmers for the use and application in rice farming.

**What will it take for your project to be successful over the next three years?**

**Success in Year 1:**

Concretely,
- Training and capacity building amongst the representatives of the Civil Society Institutions across the state of Tamil Nadu for transfer of this agricultural technology amongst their respective constituencies;
- Training and capacity building amongst the resource poor farmers on knowledge and technological know-how dissemination of azolla cultivation;
- Sensitization of secondary school children in rural areas, as they are the Young Generation Farmers;
- Establishing Mist Chambers for raising and tending quality azolla ferns of different varieties

**Success in Year 2:**

- Intensive technical and research collaborations with Agricultural University for production of BGA
- Production of Azolla seeds for wider distribution
- Similar trainings and capacity building
- Participatory action researches on azolla as cattle feed supplement

**Success in Year 3:**

- At individual farmer level, on-farm azolla seed production and formation and strengthening of azolla cultivars circles
- Income generation through supply and distribution of azolla ferns, seeds and bio-nutrients
- Production and distribution of azolla-vermi-composting and other by-products

**Do you have a business plan or strategic plan?**

Yes

**What are the three most important actions needed to grow your initiative or organization?**

**STEP 1:**

- Resource Poor Farmers [RPF] living under desperate semi-arid conditions lack forward looking perspectives in the light of their current levels of economic vulnerability. It is therefore essential to sensitize them on the importance of azolla cultivation initiation in terms of farmer-to-farmer approach, through evidence-based results.

**STEP 2:**

Azolla cultivation technology, its uses and applications and field adoptions are in its demonstration stages within the Organization and its limited number of rural actors [small holders] that proposes the initiative for expansion and diversification. It is therefore essential for the Organization to be of learning nature, in consultation and participation with the farm communities.

**STEP 3:**

For an innovation and initiative to be rooted on the ground for replication, strategic business, technological and technical partnerships are essential.

**Describe the expected results of these actions.**

The actions will be resulted in training and capacitating of over 500 Resource Poor Farmers for the optimum uses and application of azolla for different on-farm and non-farm purposes; training and capacitating over 200 representatives of Civil Society Institutions across the state of Tamil Nadu on the importance of azolla cultivation.
Nadu for launching trials and demonstrations in their respective village constituencies; sensitizing the importance of over 500 secondary school children on the potential benefits of azolla as they are the Young Generation Farmers who will make farm decisions in future; constructive and enhanced partnerships with the Government agriculture departments and research institutions for an offer of pro-active researches benefiting the farm communities largely.

What was the defining moment that led you to this innovation?

The First Green Revolution in India has sidelined many ecologically and environmentally friendly traditional practices where the main focus was on to the inclusive process of machines, tools and equipments followed by introduction of harmful chemical pesticides and fertilizers. Extensive use of chemical fertilizers and pesticides disowned many biological functions within the village biodiversity regime, and azolla was perhaps the one that was completely disappeared from mainstream agriculture. The Environmental Summit from RIO was an eye-opener for many debates and discussions on sustainability followed by ongoing debates on Climate Change and its negative consequences. Currently, in India, there has been an effort to foster 2nd Green Revolution which looks at revival of old traditions in agriculture with focus on eco-technologies and eco-friendly farming. This is the starting point for this type of innovation and popularization - Azolla is best in terms of its wide range of benefits.

Tell us about the social innovator behind this idea.

The Social Innovator behind this idea is Sundram [44] with his committed team at the Institute for Development Exchange who have for a long time been discovering sustainable solutions to the present agricultural crisis in addition to being narrow on looking at fodder crisis. The Social Innovator is particularly thankful to the Onaway Trust, based in the UK and the CAPART - the Government grant making agency in India for allowing this innovation to take place with their prime-primp seed grants.

How did you first hear about Changemakers?

Through website.

Sustainability

What would prevent your project from being a success?

Lack of financial backing could naturally prevent our Project from success, as this being difficult endeavor to attract or secure funding from conventional Donors or from the Government Departments. Climatic conditions pose challenges as azolla cultivation requires temperature in the region of 25-30 degrees celsius. That's why the Project recommends Mist Chambers for tending azolla ferns. Lack of azolla seed production and its availability in the state of Tamil Nadu is another setback for which Seed Production Unit is preferred so a larger number of farmers can gain this resource.

Financing source

If yes, provide organization name.

The Institute for Development Exchange.

How long has this organization been operating? (i.e. less than a year; 1-5 years; more than 5 years)

more than 5 years

Does your organization have a Board of Directors or an Advisory Board?

Yes

Does your organization have any non-monetary partnerships with NGOs? (yes/no)

Yes

Does your organization have any non-monetary partnerships with businesses? (yes/no)

Yes

Does your organization have any non-monetary partnerships with government? (yes/no)

Yes

Please tell us more about how these partnerships are critical to the success of your innovation.

Development solutions and innovations cannot be materialized in isolation, and so convergence, interface and partnerships are critical between the local rural communities, Government [as the major Development Player], Civil Society Institutions and the R & D Institutions and Agricultural Universities. Such networking actions are always beneficial, for example of our interventions in Varietal Seed Production Initiative as we got financial assistance from Rockefeller Foundation, through the grants approved by their Indian Partner NGO called ‘Youth For Action’, based in Hyderabad.

How many people will your project serve annually?

100 - 1000

What is your organization’s business classification?

Non-profit/NGO/citizen sector organization

What is the total number of employees and total number of volunteers at your organization?

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Have you received funding from any of the following groups? (Please check as many as apply.)
Rockefeller Foundation.

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