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Rural Entrepreneurship Development through Weed Utilization

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Aquatic plants are actual significant customs of plant life and are essential components of the aquatic biomes. These plants fulfill a wide range of ecological roles and make a substantial contribution to the structure, function and service provision of aquatic ecosystems. At the same time, the uncontrolled growth of these plants has manifold undesirable impacts on the water bodies. Their explosive growth and mat forming nature causes severe damage to the aquatic ecosystems. The negative impacts of these weeds include reducing biodiversity, affecting inland navigation, irrigation, agriculture, fisheries and backwater tourism which directly impact the livelihood of millions of people.

Across the world, unchecked growth of aquatic weeds is a serious issue. When it comes to India, more than 2 lakh hectares of water bodies are infested with aquatic weeds (Brij Gopal, 1987). Contemplating the losses caused, it is essential to keep aquatic weed growth under control in water bodies, flow water systems, ponds and tanks so that these systems can be utilized to best of their efficiency. All the efforts to control their growth via physical, chemical and biological control mechanisms have failed miserably. Researchers all over the world are coming up with concepts of utilizing the aquatic weeds by simple and economically viable techniques which will consider them as opportunities rather than threat.

Paper, packing material, fodder for cattle, manure, feed for fishes and ducks, materials for mulching and composting, biogas production, waste water treatment, mushroom production, manufacture of mats, handicrafts, furniture etc are some value added products that can be produced. Simple rural technologies can be developed and used, which will lead to economic utilization of weeds resulting in their removal from the aquatic environments.

Eichhornia crassipes commonly known as water hyacinth is one of the worst weeds in the

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world aquatic or terrestrial biomes (Holm et. al. 1977). It is recognized as a very aggressive species of aquatic plant, which grows very fast and eliminates other aquatic species in its competition in many aquatic sources like rivers, lakes, canals etc. Researchers have found out that water hyacinth menace can be utilized for making handicrafts and household articles, paper and pulp products, biodegradable boards and biomass briquettes. Its flowers can be utilized for extraction of natural dye. Water hyacinth can also be used in the eco-friendly treatment of wastewater. It can be utilized as an alternate substrate for mushroom cultivation as well as substrate for cellulose production. It can also be used as a substrate for hydroponics. Among these, water hyacinth craft is an innovative and easy technique which is developed as entrepreneurial setups all over the country to produce handicrafts and household articles like mats, bags, furniture, teepo, pillow, baskets, sandals, trays etc.

Water hyacinth stem is tough yet flexible; it can be weaved into any forms according to molds. Various patterns can be done by the hands of skillful group members who weave water hyacinth stems by hand. Each weaving pattern would require different types of dried stem, or fiber, they are also weaved in different ways to achieve the unique looks. .Also after the product is completed the surface can be decorated by various beads, cane, bamboo, sequence etc to attract the eyes of the customers. Addition of accessories and colors make the craft or article even more beautiful. These ecofriendly products are having huge demand globally; moreover their removal helps in conserving water and rejuvenates the environment. Water hyacinth craft create sustainable livelihood and inclusive growth, mainly in rural areas. Engaging women in skill development and training in water hyacinth economic utilization eventually bring out women empowerment. In India, women self help groups like Jibonjuri in Amguri, Assam, Jhajjar from Haryana, Allika from Andra Pradesh, women group from Churian and Sudhian village near Harike wetland, Punjab are some examples of such initiatives of making such eco-friendly products and selling globally. The huge infestation of aquatic weeds could be considered as natural capital by utilizing these for the production of a multitude of products, using the traditional and newly developed technologies. Most of the amount is apparently spent for removal of these weeds. Through a coordinated action plan this boon can be converted to a bane by concentrating on its utilization. It is an opportunity to earn as per the skill level of the artisan. The wages on an approximate for unskilled labourers will be 15 paisa per piece of dry steam, semi skilled labourers in case of braid & rope Rs 2 to

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3.5 per meter and the skilled labourers will be receiving finished products with value from Rs 40 in a coin purse to Rs. 30,000/- in furniture set.

Water hyacinth is a known invasive species that predominantly threatens the pillars of sustainability all over the world. In India due to the favorable climatic conditions and suitable habitats for its unchecked growth, it causes undesirable effects on the water bodies. The cost of controlling these invasive plants is high as the process has to be performed over time. Despite this challenge, there is valuable resource recovery from water hyacinth which can be used to make financial and environmental returns.

With a broader goal of improved livelihoods by economic utilization of weeds through the concept of eradication through utilization, it is possible and feasible to implement these schemes with coordinated action, in areas infested with these weeds. The rural poor can be empowered by helping them to increase their ability to effectively use their knowledge and skills in the environment of converting aquatic weeds menace to a livelihood opportunity. Developing a venture for eradication of aquatic weeds promotes income generation and local development, emphasizing the role of skills and knowledge for creating new economic and employment opportunities for the poor, the underemployed, the unemployed, informal economy workers and the otherwise disadvantaged, towards sustained economic activities in the rural areas.

The value creation and value addition of aquatic weeds through appropriate technology will ultimately help the rural development and economic enhancement of the locality by creating employment opportunities. Therefore, providing communities with opportunities to contribute to and benefit from collective action and develop their own innovations in this field of creating value added products from aquatic weeds should be encouraged. In general, aquatic weeds are underutilized resource and its research may help in considering their use for the rural enterprise development aiding in sustained improvement in quality of rural people's life.