SUSTAINABLE CONSERVATION OF WILD RICE RELATIVES IN URBAN AREAS: COMMUNITY PREFERENCES

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Crop wild relatives, *i.e.* the progenitors of domesticated crop species have the potential, with appropriate interventions, to increase agricultural production and to maintain sustainable agro-ecosystems. In this respect, the Wild Rice Relatives (WRR) are proven to have the ability to augment the quality of cultivated rice varieties to adapt into adverse conditions resulting from climatic changes (*e.g.* flood and drought tolerance) and resistance to major pests in rice (*e.g.* Brown Plant Hopper) *etc.* However, this genetic resource is sparsely distributed in various parts of the country, both rural and urban, and not surprisingly, faces the negative externalities associated with rapid economic and infrastructure development in urban areas. In the light of this, the specific objective of this study was to elicit preferences of urban communities adjacent to the sites with scattered WRR population clusters and also to enhance the understanding to which the urban stakeholders perceive their 'responsibility' of conservation and management of WRR.

The WRR sites identified in Battaramulla area (*i.e.* closer to the Diyawanna Oya and associated canals within the Sri Jayewardenepura Municipal Council limits) was selected for the study. Choice Experiment a research technique that belongs to the family of stated preference methods in environmental valuation that possesses an ability to decompose the values of environmental services into implicit values associated with particular attributes[1] was carried out to collect information from urban dwellers (n = 300). Each respondent was interviewed, aided by a structured questionnaire to explore their choices on four specific attributes and three levels pertaining to conservation, including: (1) responsibility; (2) appropriate sites; (3) best suited conservation vehicle, and (4) monetary contribution.

Initially, the percentage of a given 'level of an attribute' selected by the respondents was estimated in order to identify the 'most preferred' level. Next, Multinomial Logistic Regression (MLR) was employed with the data coded to estimate the respondents' Willingness-To-Pay (WTP) for conservation. The results highlighted that all the attributes concerned in the model were significant at 95% of significance level (Table 1). The outcome of analysis showed that the Marginal WTP (MWTP) of respondents was Rs. 1.34 per year suggesting that, though they appreciate this valuable resource, it is not relatively high compared to the values reported through previous empirical studies on WTP for WRR conservation among rural communities, plant breeders, policy planners[2] and environmental managers[3] in Sri Lanka, where the values ranged from Rs. 10 to 80.

The highest positive coefficients implied that the urban dwellers are in favor of handing over the conservation responsibilities to potential private enterprises/NGOs under the supervision of the government. Further, they perceive *ex-situ* conservation to be the ideal conservation vehicle, highlighting the importance of a government authorized *ex-situ* conservation program over selective conservation practices in place, given the inevitable destruction resulting from rapid development activities that avert *in-situ* conservation. The negative coefficients for the conservation of all available WRR populations and opting to reduce area by 50%, implied that the community prefers to maintain the existing population of WRR at an environmentally sustainable threshold level complementary to the advancing urban economic developments.

Table 1: The outcome of MLR Model

Attribute	Coefficient	SE	P Value	MWTP
Intercept	**-4.260**	**0.506**	**0.000***	
1. Responsibility				
100% Government	-8.281	1.419	0.000*	1.07
50% government + 50% private sector	6.389			
Handed over to the private sector under the supervision of government	8.281			
2. Appropriate sites				
Conserve all the existing WRR population	-3.484	0.771	0.000*	0.45
Reduce the existing population by 50%	-0.999			
Increase the existing population	3.484			
3. Conservation vehicle				
In-situ	1.410	0.591	0.017*	-0.18
Ex-situ	37.256			
Selective conservation	-1.410			
4. Monetary contribution	-7.734	0.728	0.000*	

***Note:** * = p = 0.05; SE = Standard Error; P Value = Probability Value; MWTP=Marginal Willingness-To-Pay*

In contrast to previous findings[2,3], the present results imply that *in-situ* conservation of WRR available in urban areas is not a simple task, given the stakeholder preferences is relatively low. Thus, a proper regulatory approach supported by awareness of adjacent communities is a must to conserve the existing urban WRR population *in-situ* in order to preserve these unique spatial genetic traits.

***Keywords:** Choice Experiment, Conservation, Crop wild relatives, Stakeholder preferences, Urban population, Wild rice relatives*

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