Progress of Joint Research Activities

Research No.: ㉘ **E-4 ODA Loan Joint Research** | **Date:14/Oct/2020**

1	**General Title**	**Analysis of economic efficiency of natural resources uses and problems in natural resource uses and management**
2	**Core Members**	CTU: **Huynh Viet Khai (Project Leader), Truong Hoang Dan, Vo Quoc Tuan, Le Tan Loi, Le Van Du** Japanese Universities: **Yuzuru UTSUNOMIYA (Nagasaki University), Mitsuyasu YABE (Kyushu University)**
3	**Duration**	April 2017 – (3 years)
4	**Main Objectives**	Developing natural resources management tools while applying economic tools: payment for ecosystem services and cost-benefit analysis
5	**Focal Points**	

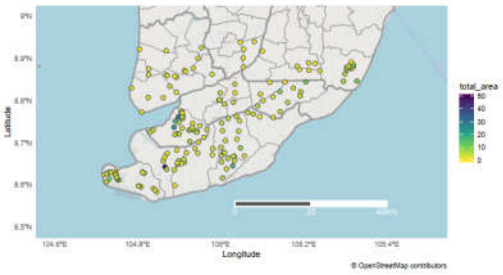

Figure 1. Spatial distribution of surveyed points classified by total area

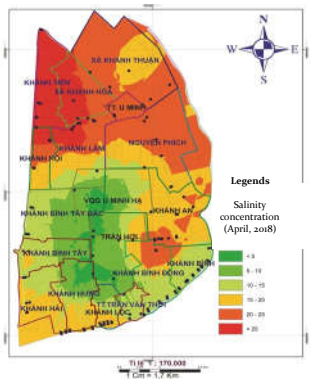

Figure 3. Interpolation map on saline concentration in April 2018 at research area

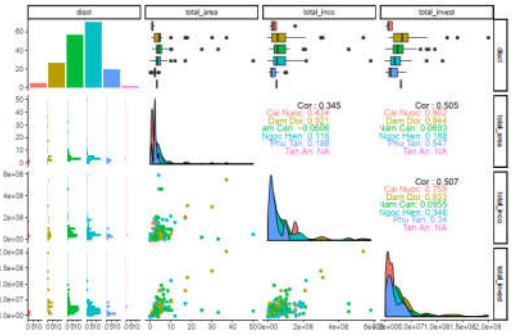

Figure 2. Correlations between different variables at the district level

Table 1. Results of evaluating the important level of *Melaleuca cajuputy* ecosystem services

Interviewee 's job/farming models	Total cores for each group of ecosystem servies (form 1 to 5)				Mean by row
	Providing services	Supporting services	Regulating services	Cultural servies	
Melaleu cajuputy	4,0	3,84	3,39	1,32	**3,14**
Acacia Hybrid	3,67	3,40	3,13	1,23	**2,86**
Two rice crop	3,37	3,70	3,80	1,00	**2,97**
Intergated rice-shrimp	1,10	1,70	2,33	1,00	**1,53**
Mean by column	**3,04**	**3,16**	**3,16**	**1,14**	

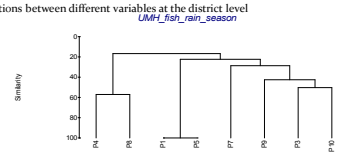

Figure 4. Similarity by wild fish species at sampling points at different acid player at research area

Table 2. Marginal Willingness to pay (MWTP) for U Minh forest' ecosystem conservation

Unit: VND

Attribute	Model 1			Model 2		
	MWTP	95% CI Lower bound	95% CI Upper bound	MWTP	95% CI Lower bound	95% CI Upper bound
Diver	874.3***	288.9	1,459.7	842.7***	268.3	1,417.1
Air	738.0**	153.1	1,323.0	727.0**	152.5	1,301.6
Product	577.6**	13.8	1,141.5	528.5*	-5.5	1,062.5
StudyHigh	17,882.0***	9,602.3	26,161.8	17,377.1***	9,631.6	25,122.5
Re-training	216.6***	99.3	333.9	217.0***	103.4	303.6

Note: ***, ** and * significant at 1%, 5% and 10%.

Table 3. Willingness to pay (WTP) for U Minh forest' ecosystem conservation project

Unit: thousand VND

Model	Mean WTP	95% Confident interval		
		Upper bound	Lower bound	ASL
All respondents included	85.515	78.172	93.021	0.0000
Protest bids excluded	130.000	113.646	147.699	0.0000

Note: ASL: Achieved Significance Level for testing H0: WTP <= 0 vs H1: WTP > 0.
Confidence intervals are estimated by the Krinsky and Robb (1986) method.

Some publications from the project results:

- Economic Value of an Ecosystem Conservation Project: A Case Study of U Minh National Forest in the Vietnamese Mekong Delta, *Journal of the Faculty of Agriculture, Kyushu University* ***(ISI journal)***.
- Willingness to pay of urban residents in Kien Giang for the ecosystem conservation of U Minh national park, *Journal of Economic Studies*
- Assessment of Can Tho Residents on the Economic Value of Ecosystem Conservation In U Minh Forest, *Journal of Economics and Development*
- Evaluation of the Willingness to Pay of Local Residents In Khanh Lam Commune for U Minh Ha Forest Protection, *Thu Dau Mot University Journal of Science*
- Khanh An Resident's Willingness to Pay for U Minh Ha Forest Conservation Project, *Journal of Science, Can Tho University*
- Estimating Kien Giang Urban Residents' Willingness to Pay for The U Minh Conservation Project, *HUAF Journal of Agricultural Science & Technology*
- Identification of ecosystem services of *Melaluca* forest in the buffer zone of the U Minh Ha National Park - Ca Mau province
- Using multivariate statistical analysis for surface water quality assessment in U Minh Ha National Park - Ca Mau Province
- Application of Primer software to evaluate the distribution of natural fishes at the buffer zone of U Minh Ha National Park – Ca Mau Province
- Evaluation of zooplankton diversity in the buffer zone of U Minh Ha National Park, Ca Mau province

	Comments	This research continues towards finalizing papers to submit Journals.