

# Assessing the Challenges and Socioeconomic Impact of Awarded Certificate of Stewardship Contracts (CSCs) in San Jose, Occidental Mindoro

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**Abstract:** The research evaluated the problems and socioeconomic effects of awarded certificate of stewardship contracts out of forty (40) beneficiaries in San Jose, Occidental Mindoro. Using a descriptive-correlational research design, quantitative data were collected through a survey from the respondents through random sampling. Data were analyzed using weighted mean, Pearson correlation, and multiple regression analysis. Results showed that most CSC beneficiaries are older adults, predominantly male, with legal tenure, managing small to medium plots and cultivating diverse crops, suggesting that experience and secure land rights support effective management. They face moderate implementation challenges, particularly limited access to credit, yet experience moderate socio-economic benefits, especially in land improvement. Land tenure significantly influences challenges, while other demographic and farm factors do not. Implementation challenges do not significantly affect outcomes, and although age, sex, and lot size do not affect socio-economic impact, the type of crops cultivated does influence the level of benefits. In conclusion, the findings indicate that CSCs contribute positively to sustainable land management and community development.

**Keywords:** certificate of stewardship contracts (CSCs), forest tenure security, sustainable land management, agroforestry, stewardship.

## 1. Introduction

Sustainable forestland management is a relevant issue in development planning since both conservation of the environment and the well-being of the communities that utilize forest products are involved. On the international scale, the protection, restoration, and sustainable use of the terrestrial ecological systems, forests, and biodiversity are highlighted by the United Nations Sustainable Development Goal 15 (United Nations, 2015). Similarly, the Rio +20 outcome document, The Future We Want, acknowledged the need to integrate forest conservation with community well-being, capacity building, and inclusive governance (United Nations, 2012). These frames demonstrate that sustainable forest management is an environmental issue as well as a social and economic issue, notably in regions where local populations depend on forestlands as a source of livelihood and security against long-term insecurity.

The principle is embodied in the Community-Based Forest Management Program in the Philippines, which grants communities and other qualified individuals formal tenure to the forestlands. The Certificate of Stewardship Contract is one of the most important tools within this strategy as it enables beneficiaries to occupy, manage and use forestland areas through sustainable practices. With the assistance of CSCs, the beneficiaries will contribute to preserve the forest resources, be involved in the planning processes of land use, observe boundaries clearly defined, and organize with the Department of Environment and Natural Resources and the local government units based on the Executive Order No. 263 and Republic Act No. 7160. In this vein, the CSCs will be deployed to fulfil two roles, to enhance the environmental stewardship and to enhance the socio-economic status of forest-dependent households.

Even though community-based forest management has been extensively identified as an approach to the relationship of conservation and rural development, there is little evidence on the real socio-economic impacts of CSCs, especially in the local context. Previous research has explored forest tenure instruments and community-based forestry in general (Lasco, Pulhin, and Cruz, 2024; Pulhin and Ramirez, 2024), but not the impact of certain tenurial features and implementation challenges on the welfare of CSC beneficiaries. More recent evaluations also indicated that there can be enduring malfunctions of community engagement, technical abilities, policy assistance, and institutional trust, implying that tenure security will never definitely have better livelihood results (Reyes, Flores, and Fernandez, 2024; Tarun, Gumiran, and Peñaflor, 2024). Such issues are particularly critical since the effectiveness of CSC implementation is not only subject to how land rights are bestowed but how well the beneficiaries manage land productively and sustainably.

This research fills this gap by analyzing the issues and socio-economic effects of granted Certificate of Stewardship Contracts in Occidental Mindoro, San Jose. In particular, it examines the tenurial profile of the CSC beneficiaries regarding age, sex, land tenure status, and lot size, as well as the type of crops grown, and examines the severity of implementation

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problems, including land tenure, land boundary delineation, the shortage of technical assistance, inadequate access to credit, ongoing deforestation, and poor land use. The paper also examines the impact of CSCs on community development and well-being in terms of land enhancement, income potential, education access, health status, and infrastructure enhancement. The research is expected to offer a better insight into the mechanisms of CSCs in practice and the reasons they might be more or less effective in diverse beneficiaries and local settings by testing the interrelations between tenurial profile, obstacles to implementing the change, and the socio-economic outcomes.

The value added by this study is the localized and integrated evaluation of the implementation of CSC. To policy makers and government agencies, specifically, the DENR and the local government units, the results could be used to provide evidence in the development of interventions, which enhance tenure support, technical assistance, access to credit and community participation. In the case of CSC beneficiaries, the research can be useful in identifying feasible aspects that reinforce land stewardship, and household wellness. To the academic and research community, it contributes to the empirical evidence into the debate on community-based forest management, tenure security and rural development in the Philippine context. Finally, the research aims to contribute to more receptive and sustainable forest management, demonstrating how the prospect of CSCs may be realized better when environmental priorities are aligned with the real needs and experiences of the local communities.

## 2. Materials and Method

### A. Research Design

A descriptive-correlational research design was utilized to conduct the study aimed at investigating the challenges and social-economic outcomes of being a recipient of an actual Certificate of Stewardship Contract among the selected CSC holders in Occidental Mindoro, San Jose. The profile of the respondents, the issues that they suffered most in connection with the implementation of CSC, and the perceived impact of the stewardship contract on their condition in families and communities were presented using the descriptive part of the research. The correlational component was adopted to understand the presence of meaningful relationships between the tenurial profile of the respondents to the challenges faced in the implementation of CSC and the socio-economic outcomes realized by the beneficiaries. It was used due to the fact that such a design did not manipulate any of the variables; rather, it collected real data of those who hold the CSC based on their experience, their current situation and their thoughts.

### B. Study Area

The research took place in the chosen barangays of the Municipality of San Jose, Occidental Mindoro Province. The barangays of the island were Ilin Proper, Ambulong, Inasakan, Pawican, all in Ilin and Ambulong Islands. These areas have been incorporated since they are also among the barangays that are awarded a Certificate of Stewardship Contracts. Four

primary barangays on the mainland were also added to enable the comparison and accessibility when collecting field data, which included Batasan, Mapaya, Monte Claro, and Murtha. These locations offered a viable platform upon which the experiences of CSC holders on the islands and mainland can be made to draw parallels, particularly concerning access to support facilities, land management issues, livelihood conditions, and community development.

### C. Respondents and Sampling Procedure

The study respondents were the CSC holders in Occidental Mindoro, San Jose. Not everyone who was a holder of CSC was, though. The study in particular, looked at the ones who had been assessed and evaluated and had been advised to renew their stewardship. It was a very important criterion due to the fact that these respondents possessed a greater chance of having firsthand and relevant experience regarding the implementation, monitoring, and renewal process of the CSC program.

There were forty respondents who took part in the study. There were twenty respondents in the island barangays and the other twenty the mainland barangays. Five respondents were found in each of the eight barangays and this afforded equal representation at the study locations. The purposive sampling was employed since the study needed participants with certain qualifications as opposed to randomly selected respondents. This strategy served to guarantee that the information collected was an interview with CSC holders who would respond to questions about land tenure and issues in implementation and socio-economic consequences of the program meaningfully.

### D. Research Instrument

The primary tool of the research was a structured questionnaire that was aimed at obtaining information concerning the purpose of the research. The questionnaire was separated into three major sections. Part I consisted of socio-demographic and tenurial descriptions of the respondents in terms of age, sex, status in land tenure, lot size and crops grown. Part II was on the challenges that lie with the implementation of CSCs, with special attention paid to land tenure status, boundary issues, technical support, lack of access to credit, persistent deforestation, and poor land utilization. Part III was concerned with the socio-economic impact of CSCs on community development, which comprises the improvement of land, provision of income, access to education, the state of health, and infrastructure development of the community.

The pre-test was conducted prior to the actual data collection to verify that the questions were clear, relevant, and in line with the study objective. The questions in the questionnaire were analyzed in order to establish how the responses are consistent with the variables under measurement. This move served to enhance the questionnaire (improved validity and reliability of the instrument) and ensured the questions could elicit good and interpretable responses among participants.

### E. Data Gathering Procedure

The researcher drafted a formal letter to be sent to the target respondents before the survey was conducted. The letter

clarified why the study was carried out and asked to schedule the interview. This was to effectively inform the respondents of the nature of the research and ask the respondents whether they wanted to participate.

The researcher administered the questionnaire personally. This enabled the researcher to clarify the questions where necessary and to ensure that the respondents comprehended the questions asked. As a part of the subjects themselves was a personal experience of dealing with land stewardship, livelihood, and community conditions, the researcher also realized the necessity to treat the respondents patiently and respectfully. The primary data were collected by way of a survey, interviews, and field observation of the CSC holders and their areas.

#### *F. Data Processing and Analysis*

The responses were then tabulated, checked, and analyzed after the collection of the questionnaires. The percentage distribution and frequencies were employed to describe the profile of the respondents, especially regarding age, sex, lot size, occupancy status, and crop types grown. These instruments assisted in outlining the typical features of the CSC holders clearly and easily.

The general level of responses of the measured variables in the study was calculated using the means and the weighted mean. They were used in the method of analyzing how much CSC implementation was a problem and how the perceived socio-economic impact of the program was. Pearson Product Moment Correlation coefficient was used to show the relationship between selected variables. This statistical tool served to determine the significant relations that could exist between the tenurial profile of the respondents and the challenges they faced on one side; and socio-economic consequences of such challenges, including land improvement, creation of income opportunities, education, health condition, and development of the infrastructure, on the other side.

#### *G. Scope and Limitations*

The research was on the association between tenurial profile, CSC implementation challenge, and socio-economic outcomes in the selected CSC holders in San Jose, Occidental Mindoro. Included in the tenurial profile were age, sex, tenure status, and size of land as well as the type of crop grown. Some of the issues that were encountered in the implementation include land tenure, boundaries, technical support, credit access, deforestation, and misuse of land. The socio-economic indicators are land enhancement, income prospects, education access, health status, and infrastructure.

The research involved CSC holders of selected barangays in San Jose, Occidental Mindoro. Due to this, findings might not accurately reflect the experiences of the CSC holders in the other municipalities or provinces. Most of the individual reporting of data on the study could be influenced by the restrictions of memory or individual bias. As the research fixed the moment in time, it might not be a complete revelation of long-term differences in the socio-economic scenario of the respondents. There could be other factors that could have

influenced the results, including limited access to the updated official records, natural disasters, changes in policies, and economic conditions.

#### *H. Ethical Considerations*

Ethical practices were respected in the study to safeguard the rights, privacy, and well-being of the respondents. The study was considered voluntary, and the study objective was outlined prior to administering the questionnaire. The researcher ensured that the data obtained could be used for academic and research purposes.

The study was conducted with confidentiality. Data analysis and reporting have taken over the personal identifying information to ensure that the identity of the respondents is not revealed. There was caution in the handling of the data, and the way the responses were given was done in a manner which did not put any individual participant into the limelight. Because the case study dealt with community members and their experiences with land stewardship, the researcher also ensured a respectful, fair, and sensitive approach was applied to the data collection process by putting the respondents into perspective.

### **3. Results**

The findings give a brief outline of the demographic and tenurial character of Certificate of Stewardship Contract (CSC) beneficiaries, the challenges they faced in implementation, and the socio-economic impacts they relate to the program. In general, the respondents indicated a moderate level of implementation difficulties (grand weighted mean = 3.26, SD = 1.278) and a moderate level of socio-economic impact on community development and welfare (grand weighted mean = 3.38, SD = 1.056). The least critical was the access to credit, which is limited, and the most successful was land improvement. The implementation challenges were only significantly related to land tenure as a profile variable and crop type as a grouping variable; only one significant difference in socio-economic impact was found in the inferential results.

Table 1 indicates that the holders of CSC were mostly experienced, landholders. The age category of 61-70 years (37.5%) was the largest, with 27.5 constituting the next category, meaning that stewardship activities were largely taken by middle-aged and older beneficiaries. The sample was 60.0% male and 40.0% female. None of the respondents claimed informal tenure, indicating that land rights being formal and still maintained is the key aspect to their trust in their ability to administer and better the CSC areas. The majority of beneficiaries received 1- 2 ha of land (42.5%), and their production was largely long-term and diversified, with timber trees (67.5%) and plantation crops (50.0%) most frequently reported, and fruit trees (45.0%) and agricultural crops (12.5%).

Table 2 summarizes the level of challenges faced in the implementation of CSC. The mean weighted score of 3.26 shows that the overall difficulties were moderate. The highest sub-mean ( $M = 3.72$ ,  $SD = 1.361$ ) and the only dimension that was perceived to be high was limited access to credit. This finding is indicative of the struggle that beneficiaries face when trying to get affordable financing, the reluctance of financial

Table 1  
Distribution of respondents based on tenurial profile

Variable	Frequency	Percentage
<b>Age</b>		
40 years old and below	3	7.5
41-50	6	15
51-60	11	27.5
61-70	15	37.5
71 and above	5	12.5
<b>Total</b>	<b>40</b>	<b>100</b>
<b>Sex</b>		
Male	24	60
Female	16	40
<b>Total</b>	<b>40</b>	<b>100</b>
<b>Land Tenure Status</b>		
Legal	40	100
<b>Total</b>	<b>40</b>	<b>100</b>
<b>Size of Land Awarded (in hectares)</b>		
Below 1	7	17.5
1-2	17	42.5
3-4	8	20
5 and above	8	20
<b>Total</b>	<b>40</b>	<b>100</b>
<b>Type of Crops cultivated</b>		
Plantation Crops- (Bamboo, Coconut Tree)	20	50
Timber Trees - (Gmelina, Mahogany, Bangkal, Leichhardt pine, Native Trees, Anapla, Queen’s Crape-Myrtle)	27	67.5
Fruit Trees - (Mango, Cashew, Spanish Plum, Custard Apple, Banana)	18	45
Agricultural Crops - (Rice, onion, and other Agricultural Crops)	5	12.5

institutions to provide loans to CSC holders, and the situational shortage of government loan programs. There was moderate technical support, ongoing deforestation, irregular land use, land tenure, and demarcation of boundaries. Though these issues were not so pronounced as to halt stewardship activities, the rating indicates that the beneficiaries still require more obvious land-use directions, better boundary demarcation, frequent technical assistance, enhanced forest protection, and better access to credit.

development and welfare of the community. The average of 3.38 demonstrates that the impact level is moderate, that is, the program had visible benefits but not yet very transformative results in all aspects. The highest sub-mean ( $M = 3.67$ ,  $SD = 1.036$ ) was land improvement, which was considered high and indicated that CSCs were best observed under improved land use, rehabilitation of degraded lands, and enhanced productivity by sustainability in farming of lands or management of forest lands. The chances of income, availability of education, health status, and infrastructure progress were moderate. Infrastructure development was the lowest of these in sub-mean ( $M = 3.24$ ,  $SD = 1.050$ ), which implied that physical changes occurring on the community level need an even more comprehensive institutional support in addition to the direct gains of CSC implementation.

Table 2

Summary of challenges encountered in the implementation of CSCs

Challenge dimension	Mean	SD	Interpretation
Land tenure issues	2.93	1.331	Moderate
Boundary delineation	2.93	1.285	Moderate
Availability of technical assistance	3.33	1.146	Moderate
Limited access to credit	3.72	1.361	High
Continued deforestation	3.34	1.295	Moderate
Improper land use	3.34	1.248	Moderate
<b>Grand weighted mean</b>	<b>3.26</b>	<b>1.278</b>	<b>Moderate</b>

Scale: 1.00-1.49 = Very Low; 1.50-2.49 = Low; 2.50-3.49 = Moderate; 3.50-4.49 = High; 4.50-5.00 = Very High

Table 3

Summary of socio-economic impact of CSCs on community development and welfare

Socio-economic dimension	Mean	SD	Interpretation
Land improvement	3.67	1.036	High
Income opportunities	3.31	1.095	Moderate
Educational access	3.32	1.122	Moderate
Health condition	3.39	0.975	Moderate
Infrastructure development	3.24	1.050	Moderate
<b>Grand weighted mean</b>	<b>3.38</b>	<b>1.056</b>	<b>Moderate</b>

Scale: 1.00-1.49 = Very Low; 1.50-2.49 = Low; 2.50-3.49 = Moderate; 3.50-4.49 = High; 4.50-5.00 = Very High

Table 3 gives the socio-economic effects of CSCs on the

Table 4 demonstrates the relation between the tenurial profile of respondents and challenges faced in the implementation of CSC. Age ( $r = .037$ ,  $p = .821$ ), sex ( $r = .098$ ,  $p = .547$ ), size of land awarded ( $r = .028$ ,  $p = .866$ ), and type of crops cultivated ( $r = .233$ ,  $p = .147$ ) were not significantly related to implementation challenges. Conversely, land tenure was significantly and positively associated with the difficulties faced ( $r = .824$ ,  $p = .000$ ). This indicates that tenure-related conditions were more closely associated with implementation difficulties than demographic or farm-related characteristics.

Table 5 shows that none of the specific challenge dimensions had a significant relationship with the socio-economic impact of CSCs. Land tenure issues ( $r = .064$ ,  $p = .694$ ), boundary delineation ( $r = .040$ ,  $p = .797$ ), availability of technical assistance ( $r = .122$ ,  $p = .452$ ), limited access to credit ( $r = .011$ ,  $p = .946$ ), continued deforestation ( $r = .020$ ,  $p = .905$ ), and improper land use ( $r = .038$ ,  $p = .815$ ) all had very weak and

Table 4  
Relationship between tenurial profile and challenges encountered in CSC implementation

Independent Variable	Dependent Variable	Correlation Coefficient	Significance	Description
Age	Challenges encountered in the implementation of CSCs	.037	.821	Not Significant
Sex		.098	.547	Not Significant
Land tenure		.824*	.000	Significant
Size of land awarded		.028	.866	Not Significant
Type of crops cultivated		.233	.147	Not Significant

Table 5  
Relationship between implementation challenges and socio-economic impact of CSCs

Independent Variable	Dependent Variable	Correlation Coefficient	Significance	Description
Land tenure issues	Socio-economic impact of CSCs	.064	.694	Not significant
Boundary Delineation		.040	.797	Not significant
Availability of Technical Assistance		.122	.452	Not significant
Limited Access to Credit		.011	.946	Not significant
Continued Deforestation		.020	.905	Not significant
Improper land use		.038	.815	Not significant

Table 6  
Difference in socio-economic impact of CSCs according to respondent groupings

Independent Variable	Dependent Variable	t- value	Significance	Description
Sex	Socio-economic impact of CSCs	1.443	.157	Not Significant
Independent Variable	Dependent Variable	F- value	Significance	Description
Age	Socio-economic impact of CSCs	1.85	.104	Not Significant
Lot size awarded		1.08	.380	Not Significant
Type of crops cultivated		2.09	.002	Significant

non-significant associations. Thus, while the respondents experienced implementation challenges, these particular challenges did not statistically determine the socio-economic benefits reported in the study.

Differences in socio-economic impact according to respondent groupings are presented in Table 6. Sex did not produce a significant difference ( $t = 1.443, p = .157$ ), showing that male and female respondents reported comparable CSC benefits. On the other hand, Age ( $F = 1.85, p = .104$ ) and lot size awarded ( $F = 1.08, p = .380$ ) were likewise not significant. However, the type of crops cultivated showed a significant difference ( $F = 2.09, p = .002$ ), indicating that the socio-economic impact of CSCs varied according to the crops grown by beneficiaries. This result suggests that crop selection matters because different crops may generate different levels of income, productivity, and economic return.

Taken together, the findings show that CSCs have contributed most clearly to land improvement while producing moderate gains in income, education, health, and infrastructure. The program appears to benefit beneficiaries across sex, age, and land-size groups in relatively similar ways; however, crop type influences the level of socio-economic impact. At the same time, the significant relationship between land tenure and implementation challenges highlights the continuing importance of secure and well-defined land rights in strengthening CSC implementation.

#### 4. Discussion

One of the most notable findings is that implementation challenges did not significantly affect socio-economic outcomes. Despite access issues that arose in credit access, technical assistance, boundary delineation, deforestation, and land use compliance, beneficiaries continued to report moderate benefits of CSCs. This could be a sign of strength in CSC holders particularly those who still manage and develop their

land regardless of the scarcity of resources. It can also indicate that other variables not completely accounted for in the research, like family labor, the choice in cropping, the local market structures, individual initiative, community cooperation, or the support provided by LGUs and the DENR offices, may be the determinants of socio-economic performance more than the quantified obstacles to implementation.

The study is limited in a number of ways. It was also limited to CSC holders in San Jose, Occidental Mindoro, with 40 respondents, so these results might not be entirely accurate about the experience of CSC in any other municipalities or regions. The investigation was also primarily based on self-reported data, which can be influenced by the possibility of recall bias or personal perception. Because of the design that captured conditions at a single point in time, it was not able to capture long-term changes in income, land productivity, forest condition, or household welfare. Subsequent scholars can further this research by conducting a larger sample size, comparisons between the provinces, longitudinal tracking, and the use of official land, production, income, and environmental data.

Further, the general results demonstrate that CSCs still could be a useful resource to manage land sustainably and develop communities, yet their effectiveness depends on the surrounding support system. The best provision of the program is land improvement, and the wider socio-economic potential of the program can be enhanced by introducing better tenure processes, easier access to credit, frequent technical support, a better concept of boundary demarcation, enhancing monitoring, and making plans of livelihood based on crops. When utilized effectively, the findings will inform DENR, LGUs, financing institutions, and community organizations on how to come up with more responsible interventions to ensure that CSC beneficiaries make legal stewardship more regular and

inclusive development.

## 5. Conclusions

According to the results of this research, there are significant implications for future research and practice based on the findings of this study related to Community Sharecropping Contracts (CSCs). The CSC beneficiaries are mostly experienced landowners, implying that tenure security, coupled with age and sex, could help in creating a good land steward. Financial constraints are the most restrictive factor for the beneficiaries, though they have moderate challenges, which also implies that access to resources is a major factor in hindering optimal CSC activity. The results will also indicate that CSCs have a positive role in the development of the community, particularly in the improvement of the land, hence proving that the program can enhance sustainable land management.

Moreover, land tenure turned out to be a decisive factor in the type of problems that beneficiaries face, emphasizing the significance of having land rights that are safe, and other demographic or farm factors seem to have less impact. Although there exists some difficulty in implementation, the beneficiaries continue to benefit socio-economically moderately, hence indicating their resilience and ability to cope with CSCs. Finally, CSC advantages tend to be fair in terms of age, gender, and land size, but the result varies with the type of crop, and the key point is that crop selection plays a pivotal role in shaping economic outcomes.

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