

Socio-economic Transformation and Agrarian Adaptation: Mahaweli System H, Sri Lanka

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Received: 2025-11-10
Revised: 2025-11-10
Accepted: 2025-12-03
Published: 2025-12-04

Key words: Agrarian society; Socio-economic changes; Adaptive strategies; Bourgeoisie; Proletariat.

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Abstract. The global agricultural transition has created class divisions between the wealthy bourgeoisie and the laboring proletariat, thereby strengthening capitalist structures. Sri Lanka reflects this shift as it moves from subsistence to market-driven farming through policy and technological changes. The Mahaweli System H Area shows this transformation in land ownership, income, and livelihoods. Through a comprehensive investigation into the socio-economic changes in System H, this study examines the adaptive strategies employed by settlers to navigate these shifts. The mixed-method approach using the Convergent Parallel Design was applied, including semi-structured questionnaire survey and field observations. The survey was conducted with 40 settlers selected using a stratified random sample, with the consultation of the Mahaweli Residential Project Manager's Office. The sample size was determined using a Standard Proportion-based formula with an 80% confidence level and 10% margin of error. The research identified four income categories: Higher Income (HI), Medium Lower Income (MLI), Lower Higher Income (LHI), and Lower Income (LI), illustrating the bourgeoisie and proletariat classes. Dynamic settlers expose adaptability and innovation, while conventional settlers maintain traditional practices, highlighting a socio-economic landscape. The study highlights the ongoing struggle of marginalized settlers and the complex interplay among socio-economic structures, government interventions, and individual resilience. While socio-economic dynamics persist within the framework of the bourgeoisie and proletariat, immediate radical transformations appear unlikely. The findings shed light on the difficulties of agrarian societies and offer insights into addressing vicious poverty in agrarian communities.

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1. Introduction

The global shift in agriculture has led to a profound transformation in the social and economic dynamics of rural communities (Harini, Yunus, Kasto, & Hartono, 2012). The emergence of a class-based society, with the wealthy bourgeoisie dominating over the laboring Proletariat, has facilitated the transition to capitalism (Rao & Behera, 2017). This process has been characterized by the pauperization of small landholders, who are increasingly separated from their land and forced to become labor providers (Zhang, 2015). It leads to a decline in income and loss of land ownership (Dharmasiri, 2012; Krishnaji, 2018; Shanmugaratnam, 1985a). Mechanization and technological advancements have boosted productivity but displaced labor, while weather and market risks have further reduced agriculture's importance (Bazargani & Deemyad, 2024; Harini, Susilo, & Nurjani, 2015; Withanachchi, Köpke, Withanachchi, Pathirana, & Ploeger, 2014). Consequently, peasants are proletarianized, becoming semi-proletariats or full proletariats (Kautsky, 1988; Napier et al., 2020).

Sri Lanka has experienced a notable agricultural shift and adaptation from subsistence farming to market-driven industrialized practices (Dharmasiri & Jayarathne, 2021; Gyapong, 2019a). This change has been primarily fueled by government policies, institutional reforms, and technological

advancements, all of which have been instrumental in reshaping the country's agrarian sector (Binswanger-Mkhize & McCalla, 2010; Rao, 2007). During Sri Lanka's feudal era, rice cultivation flourished, empowering politically influential landlords and labor-providing groups (Pain, 1986). However, decentralization and policy shifts triggered agricultural decline, with Swidden farming becoming prevalent. External trade sparked commercialization, benefiting feudal nobility and the monastic community (Kumara, 1991; Shanmugaratnam, 1985b). British colonial rule perpetuated feudal systems, favoring crop cultivation for plantations and leading to farmer land dispossession. Grain taxes worsened starvation, while market pressures impoverished peasants, driving land sales to the emerging petty bourgeoisie. Semi-proletariats emerged as wage workers on commercial plantations owned by local landowners (Beverly, 1981; Gyapong, 2019b; Sefer, 2018).

There's a noticeable absence of scholarly research on socio-economic changes and adaptive responses within agrarian communities in Sri Lanka. This study aims to fill these gaps by investigating such changes, especially within the Mahaweli System H Project Area. It seeks to analyze these transformations and understand settlers' adaptive strategies to maintain their livelihoods amidst these shifts. Ultimately, this research aims to enhance our understanding of agrarian dynamics in Sri Lanka.

2. Methods

The research methodology commenced with a mixed-method approach using the Convergent Parallel Design, including a semi-structured questionnaire survey and field observations. The survey was conducted with 40 settlers who were selected employing a Stratified Random sample with the consultation of the Mahaweli Residential Project Manager’s Office. The quantitative data collection was adopted with a representative sample of 40 settlers spanning various income groups for the study. This approach aimed to provide comprehensive insights into income distribution and livelihood patterns. Two Grama Niladhari (GN) divisions within the Mahaweli system H, namely Eppawala and Kiriamunukole GN divisions (Figure 1), were purposively chosen in consultation with officials from the Mahaweli Development Authority (MDA) to ensure diverse economic representation.

Determination of Sample Size

The sample size was calculated by following the formula presented by Taherdoost (2020). In the formula n is the required sample size, p is the percentage occurrence of a state or condition (The default value is 50%), E is the percentage of maximum error required or the margin of error (The default value is 10%) and Z is the value corresponding to the level of confidence required (The default value is 1.28).

$$n = p (100 - p) \frac{z^2}{E^2}$$

The sample size was calculated based on the total population of Eppawala and Kiriamunukole GN of 5148. The sample size of the study area was 41 with P = 50%, E=10%, and Z= 1.28). A total of 41 settlers were surveyed; however, one questionnaire was rejected due to incomplete responses, resulting in a final valid sample of 40 respondents.

Secondary data on the area’s socio-economic characteristics were sourced from the MDA and the Divisional Secretariat of Thalawa in Anuradhapura District. Quantitative data underwent descriptive statistical analysis, while thematic analysis was applied to qualitative data. The findings are presented using graphs and diagrams.

The socio-economic dynamics within agrarian communities have long been a subject of intrigue and scholarly exploration, often drawing upon the foundational principles of Marxist theory. This research paper aims to investigate into the intricacies of the agrarian community in System H, Sri Lanka, through a mixed-method approach that seeks to unravel the complex interplay of social strata, adaptive strategies, and the broader socio-economic landscape. At the heart of this inquiry lies the influential Marxist perspective, which has provided a robust framework for understanding the dynamics of class, labor, and the material conditions that shape social praxis (Ahuja, 2002; Subejo, Dyah, Ratih, & Gagar, 2019). The researchers have constructed a “Dynamic Framework of Social Strata” to explore the nuanced differentiation within the agrarian community, drawing insights from studies that have examined similar phenomena in other regional contexts as follows:

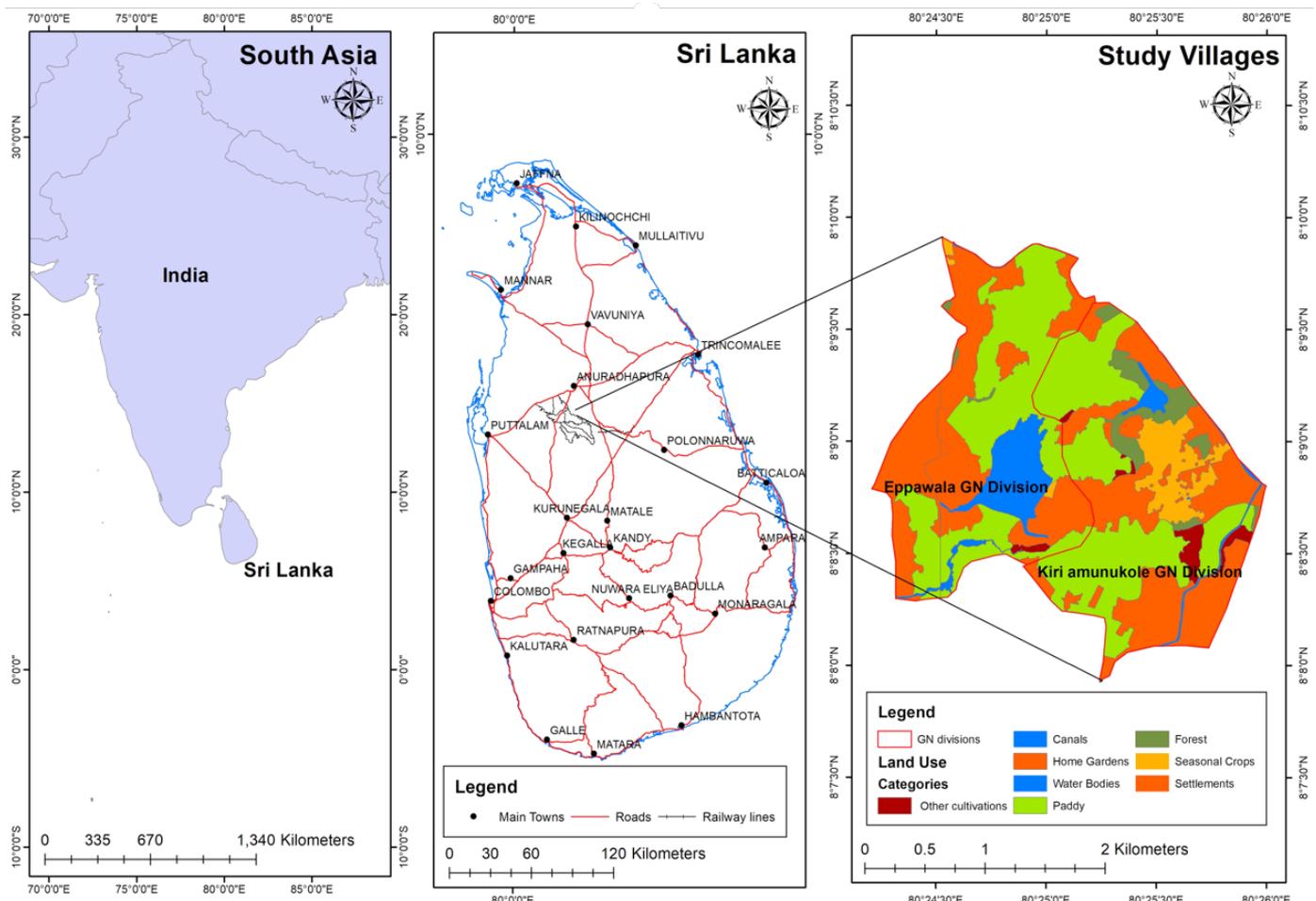


Figure 1. Study Area; Eppawala and Kiriamunukole GN division in Mahaweli H Zone

- a. Homogeneous geographical landscape.
- b. Initial economic (level of wealth) homogeneity of settlers.
- c. Equal land distribution among settlers (all settlers are allocated one hectare of land, including muddy and highlands).
- d. Availability of water resources.
- e. Regional administrative control over economic activities.

Considering the aforementioned factors enhanced the researchers' capacity to evaluate the intricate social stratification within agrarian society and its complications on livelihoods and economic activities in System H, representing one of Sri Lanka's well-planned development models.

3. Results and Discussion

The agrarian society of Mahaweli System H has been undergoing significant and continuous changes in response to global and national scenarios over the past seven decades. This dynamism within the agrarian society is evident, and this section aims to elaborate on the changes occurring within System H.

The irrigation system of Mahaweli System H has emerged as a prominent irrigation network within the arid region since its inception in 1975. It was initially designed to efficiently utilize the local water resources in the area, as depicted in Figure 2.

The economy predominantly relies on agriculture, with two distinct cultivation seasons: the *Maha* season, from October to January, and the *Yala* season, from May to August. *Maha* relies on rainfall supplemented by irrigation water, while

Yala requires irrigation throughout. The land use pattern of the area is depicted in Figure 3, illustrating the spatial distribution of agriculture in the region.

The project area encompasses 43,725 hectares, with 29,150 hectares designated for settlement under the program. Approximately 24,000 families earmarked for settlement in System H, and 22,715 families have been successfully settled in the area. The remaining settlement process was finalized by 1983. The current scheme has allocated land to three categories of settler families within System H (Dissanayake, 2016; Jayewardene & Kilkelly, 1983):

- i. Resettles: Local individuals relocated under the new scheme.
- ii. New Settlers: Selected families from each electorate in the Central Province are settling in the area.
- iii. Evacuees: Individuals displaced by the construction of reservoirs, losing their lands to inundation.

Initially, all settlers held plots of land of similar sizes in geographically homogeneous areas. Each settler was allotted 1 hectare (2.5 acres) of irrigable land and 0.2 hectare (0.5 acres) of highland (Jayewardene & Kilkelly, 1983). Over four decades (1983 to 2024), settlers have achieved varying levels of socio-economic status. Despite starting in similar conditions, their situations have evolved.

Even though the settlers in System H come from diverse locations and for various reasons, they can be categorized under the umbrella term of "rural peasants." In every agrarian society, peasants or settlers are typically classified into two primary groups: **Dynamic** and **Conventional**.

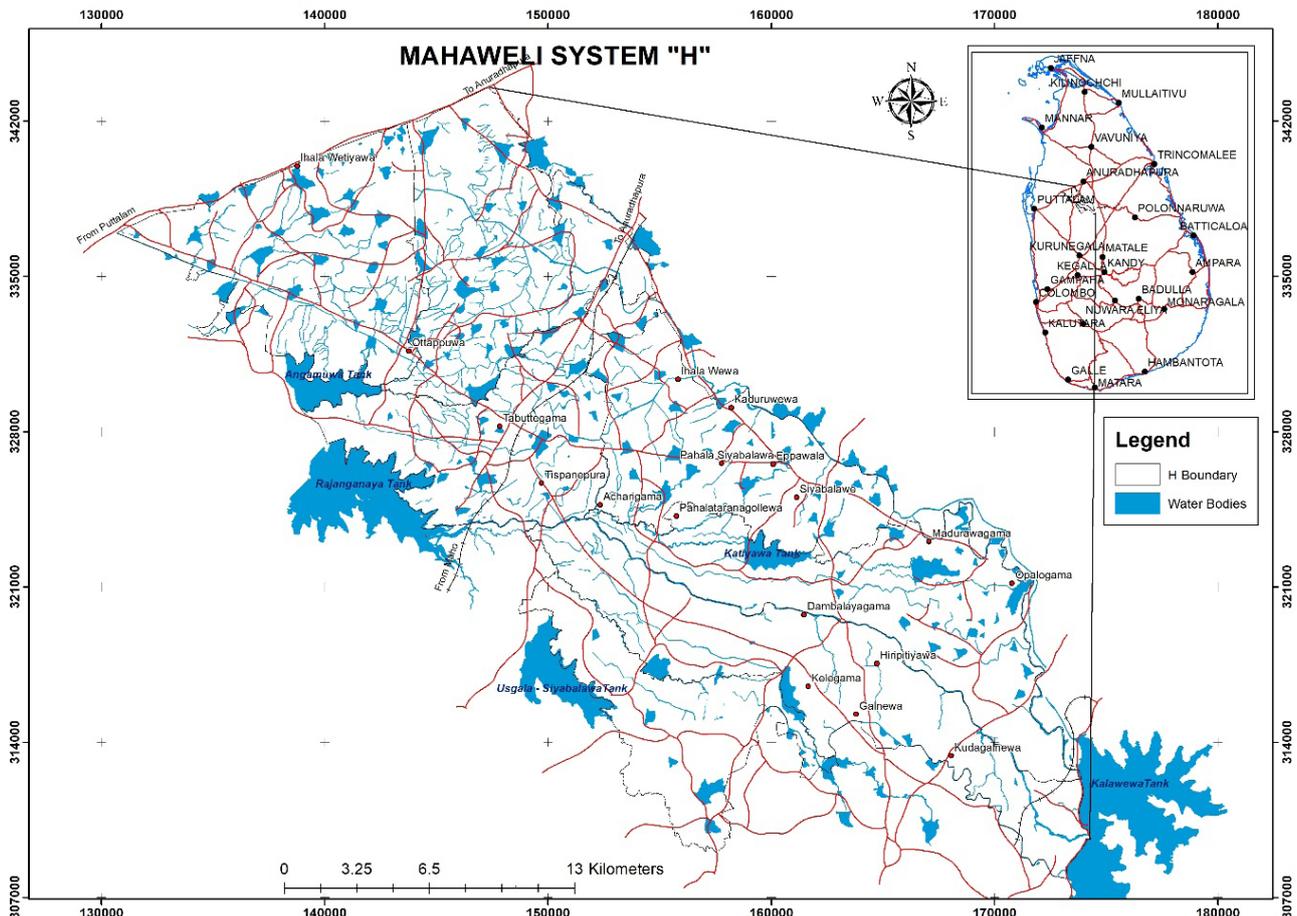


Figure 2. Water bodies of the Mahaweli H zone, Sri Lanka

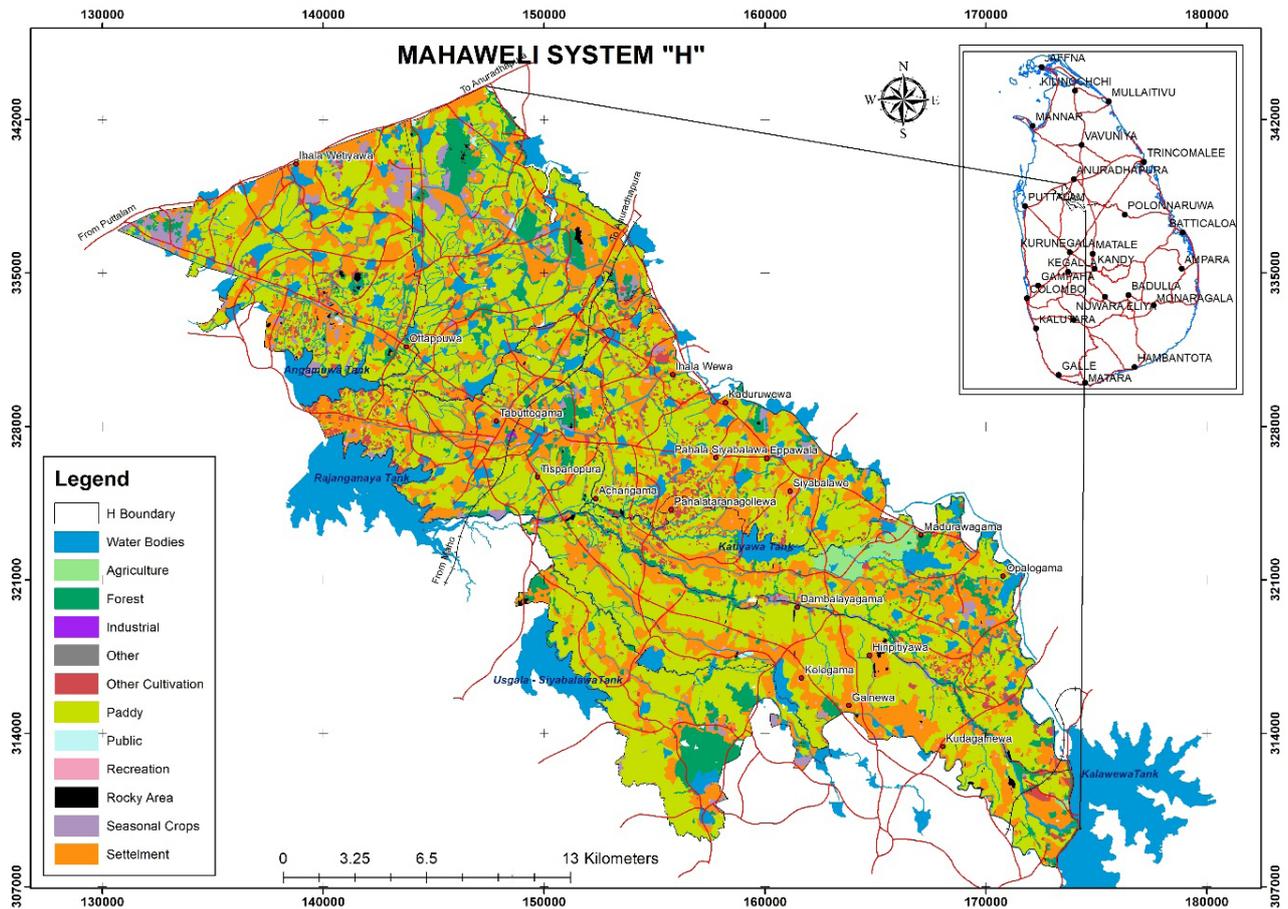


Figure 3. Land Use of the Mahaweli H zone, Sri Lanka

Dynamic agricultural settlers demonstrate adaptability, innovation, and a willingness to embrace change. They utilize various farming techniques, adopt modern methods, and diversify income sources. They strive to improve their socio-economic status by engaging with government programs, technology, and market changes. Through cooperatives, investments in irrigation, and off-farm employment, they collaborate to address common challenges and negotiate advantageous terms with buyers and authorities.

Conventional settlers in agriculture maintain traditional practices and resist change. They rely on subsistence farming, cultivating staple crops over generations. Limited access to resources and conservative attitudes hinders their adoption of new technologies and innovations. Accessing credit, modern inputs, and market information impedes productivity improvement and livelihood diversification. Additionally, they are more vulnerable to external shocks like adverse weather and price fluctuations due to their limited adaptive capacity.

Thus, the study focused on examining the current scenario of the village Eppawala and Kiriamunukole Grama Niladhari Divisions. Eppawala, a village with a population of 3,200 individuals, has 1,800 females and 1,400 males. Age-wise, children (below 15 years) constitute 10.62% of the working force, while individuals aged 16-60 years comprise 76.87%. Additionally, elders (over 61 years) make up 12.5% of Eppawala's population. In Kiriamunukole GN, with a population of 1,948, there are 998 females and 950 males. Among them, 6.41% are children, 83.31% are part of the labor force, and 10.26% are elders.

The major source of income is derived from agriculture and allied activities, such as providing labor, running pottery shops, and engaging in other village activities. Table 1 illustrates the employment composition of the village.

Likewise, Table 2 illustrates four income categories: LI (earning < 25,000), LHI (25,001-50,000), MLI (50,001-100,000), and HI (> 100,001). In the study area, 57.65% belong to the MLI category, while 19.21% fall into the LHI category. Surprisingly, MLI constitutes over 50% of the population, indicating their majority status. In comparison, only around 8% of the population falls below the national poverty line of Rs. 16,975 for February 2024 (Rawlings, Hayes, Cowie, & Collins, 2007) may be classified as a proletariat.

According to the categorization, each category has specific characteristics identified through the fieldwork conducted in System H. The features identified in the four categories are as follows.

- HI category: Indicates significant financial resources and local economic access.
- MLI category: Encounters challenges and opportunities in their economic interests.
- LHI category: Possibly faces some economic constraints but maintains a degree of financial stability.
- LI category: Potentially experiences significant economic hardships and relies on support systems for survival and progress in the settlement.

Accordingly, the aforementioned four income categories are redefined as '**Bourgeoisie**' and '**Proletariat**'. Dynamic settlers, characterized by adaptability and innovation, tend

Table 1. Composition of Employment

Occupation Category	Eppawala GN		Kiriamunukole GN		Total	
	Number of people	%	Number of people	%	Number of people	%
Agriculture	2200	68.75	1200	61.6	3400	66.05
Agriculture (SMART)	30	0.93	2	0.10	32	0.62
Animal Husbandry	25	0.78	10	0.51	35	0.68
Government sector	80	2.5	210	10.78	290	5.63
Private sector	200	6.25	60	3.08	260	5.05
Labours	40	1.26	12	0.63	52	1.01
Unemployed	625	19.53	454	23.30	1 079	20.96
Total	3200	100	1948	100	3200	100

Source: Field survey, 2024

Table 2. Income Distribution of the Peasants - (per month in LKR)

Income categories	Eppawala GN		Kiriamunukole GN		Total		Categorization
	Peasants	%	Peasants	%	Peasants	%	
Less than – 25,000	160	6.8	91	17.3	251	8.7	Lower-income (LI)
25,001 – 50,000	400	17.1	150	28.5	550	19.2	Lower higher income (LHI)
50,001 – 100,000	1400	60.0	250	47.4	1650	57.7	Mid-level income (MLI)
Over 100,001	375	16.1	36	6.8	411	14.4	Higher-income (HI)
Total	2335	100.0	527	100.0	2862	100.0	

to progress into the HI categories. They embrace modern practices like SMART farming, employing technologies such as the Internet of Things and efficient resource management. They also establish protected farms and secure loans for machinery, even renting out equipment for extra income. While a minority, they could be likened to the Bourgeoisie, representing a small but economically influential segment of the population.

Table 1 in System H outlines the settlers' employment, with around 22% engaged in labor or unemployed, providing labor to wealthy farmers. These individuals provide labor to affluent farmers (bourgeoisie). Field level observation founded that greenhouse farming is another activity, that allows optimized crop yields. These farmers may belong to the HI category, representing <1% of the total population. As per Karl Marx, the bourgeoisie own capital, exploit labor and use surplus value to accumulate wealth (Kumara, 1991; Pierre, 2022).

The MLI category may sometimes transition into the bourgeoisie or may not, depending on various factors. Due to the economic challenges brought on by COVID-19 and other economic crises in the country, many settlers have lost their usual economic activities, causing them to descend from the MLI category and enter the LHI category. Simultaneously, settlers who were previously in the LHI category may ascend to the MLI category due to a variety of reasons. At the same time, settlers can transition between the MLI category and the HI category, and vice versa.

Figure 4, which was developed using the quantitative and qualitative data obtained from the field suggests that the LHI and LI categories may face worsening economic conditions

due to a lack of modern farming technology, low investment, and crop failures. This could result in lower production, productivity, and income generation, leading to a continuous decline in their economic status. In these circumstances, these sectors are similar to proletariats, who own labor power (the ability to work) and possess no or minimal resources other than their capacity to work with their hands, bodies, and minds (Shanmugaratnam, 1985a). With minimal resources beyond their ability to work, they must seek employment to sustain themselves and their families.

According to the dynamics of social strata, the settlers who belong to the proletariat experience further deterioration in their economic situation, which may lead to either the eviction or resilience of the area. When their economic conditions worsen, many seek employment opportunities in urban areas or temporarily migrate abroad, particularly to the Middle East, for lower-level jobs.

Remarkably, many settlers receive subsidies from the Government to sustain their livelihood. Examples of such subsidies include the 'Samurdhi' and 'Aswesuma' programs. 'Samurdhi' is an economic and social development program that aims to eradicate poverty in Sri Lanka. At the same time, 'Aswesuma' is a new welfare benefit payment scheme implemented by the Government with the support of the World Bank. This scheme categorizes beneficiaries into four groups (severely poor, poor, vulnerable, and transitional) and aims to provide cash transfers to approximately 35 % of the population (Ramos et al., 2020)

Field data reveals that 9.68% of the total population in the Eppawala GN division receives the Samurdhi subsidy. In comparison, another 4.26% of the total population in

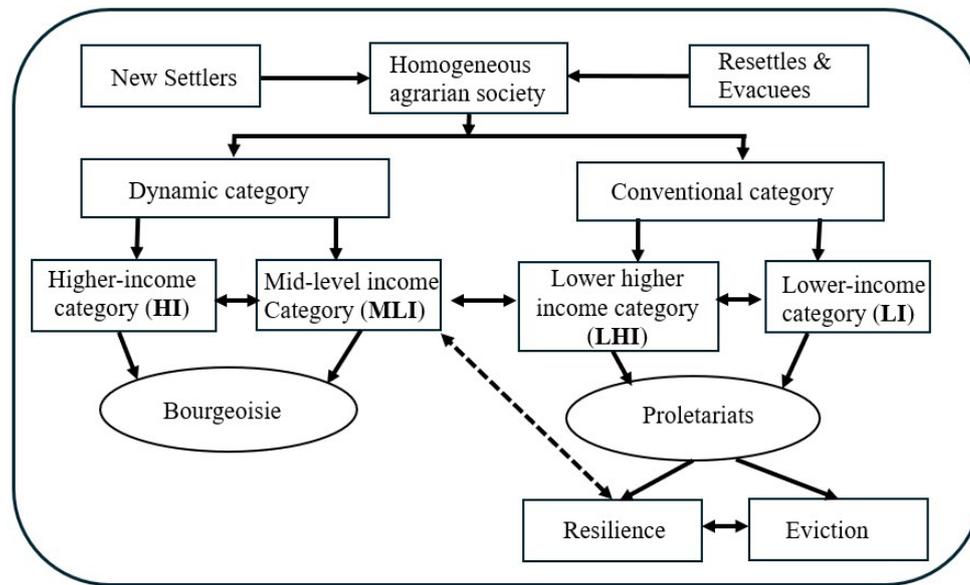


Figure 4. Dynamics Framework of Social Strata

the Kiriamunukole GN division are also beneficiaries of the same program. Additionally, 5.15% of the population in the Eppawala GN division benefit from *Aswesuma*, while 4.65% of the population in the Kiriamunukole GN division in the Mahaweli H zone are beneficiaries of the *Aswesuma* social security network system. In total, 14.83% and 8.91% of Eppawala GN and Kiriamunukole GN benefit from either one or both programs. On one hand, these subsidies support the livelihoods of the recipients, while on the other hand, they may discourage settlers from eviction. This category could be the ‘resilience’ group, characterized by the ability to bounce back or recover quickly from difficulties.

According to Figure 4, settlers belonging to the ‘resilience’ category may be able to either advance to the ‘MLI category’ through their performance in agriculture or other activities or face eviction. Some settlers have temporarily migrated overseas or to cities to earn money, returning to invest to enhance their economy. Fieldwork indicated that a limited number of settlers could transition their livelihoods into the MLI category due to this factor. However, simultaneously, some settlers experienced a worsening economic situation, leading to further evictions.

Recently, the government adopted a new policy (Urumaya program) granting land rights to peasants and providing free land rights to those with non-transferable land grants. Under this system, landholders will be free to sell their land as they wish. However, this may potentially lead to increased ‘eviction’ risks. Another notable factor is that settlers belonging to the MLI category may transition to the resilience category due to economic losses or deterioration caused by economic challenges in the country. This transition is illustrated by the dotted line in the diagram. Regardless of the assumptions made in this study, it is inevitable to consider how and why settlers are shifting their economic positions.

According to the theory of Karl Marx (Kumara, 1991), society is divided into two classes: the proletariat and the bourgeoisie (Pye, 2021). A social class comprises individuals with similar income and living conditions as the proletariat, consisting of low-income laborers, whereas the bourgeoisie comprises high-income owners (Scoones, 2021). Initially, the settlers were granted similar plots of land in a homogeneous landscape (Appelrouth & Desfor Edles, 2010). Dynamic social

changes have occurred in the study area over the last seven decades. However, the study identified four types of income categories at present (Rupakula, 2016; Yang, Xu, & Kong, 2022).

- a. HI category: Representing the bourgeoisie or capitalist class, these settlers possess significant wealth and control over production means, facilitating further wealth accumulation.
- b. MLI category: Comprising middle class, including small landowners, independent farmers, or skilled workers with moderate ownership of assets.
- c. LHI category: Individuals transitioning from the middle class to the proletariat, with lower income but some financial stability, possibly through small-scale land ownership.
- d. LI category: Constituting the proletariat or working class, these settlers have the lowest income levels and depend mainly on selling labor for sustenance.

Currently, the above four economic categories could persist there and be broadly categorized as Bourgeoisie and Proletariat. The bourgeoisie will continue strengthening by applying modern technology and higher capital investments, resulting in high returns. The proletariat will continue to supply their labor to the bourgeoisie within the economic system in the area. Those in the proletariat category will remain in the same category with the assistance of government subsidies. This pattern can be illustrated in Figure 5 below.

The current government has been implementing a new land titling program called ‘URUMAYA.’ Under this programme, salable deeds with freehold rights are to be given for two million land units. Accordingly, a free grant is to be awarded to the people for the lands of which possession has been given to them through grants and permits subject to limited land rights such as such as ‘*Swarnabhoomi*,’ ‘*Jayabhoomi*,’ ‘*Rathnabhoomi*,’ and ‘*Bimsaviya*,’ and thereby they will get salable, freehold land right for those lands.

However, many critics have pointed out a major disadvantage: once freehold ownership is granted, the land can be sold or mortgaged without restrictions, potentially leading to problems. For example, if the landowner sells the

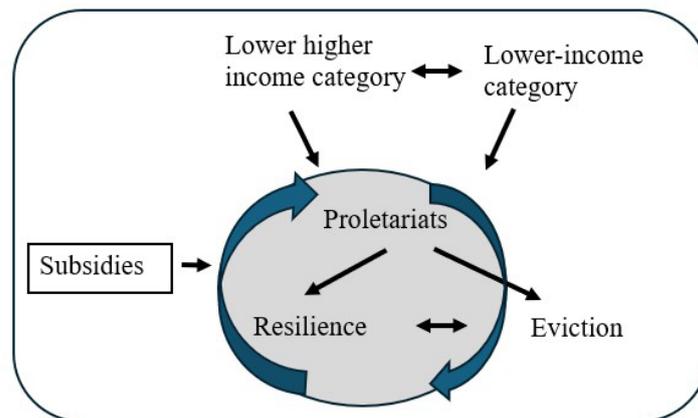


Figure 5. The model of perpetual proletariat

property, their family and future generations lose the right to that land. In such cases, a dependent spouse (often the wife) may find themselves in a vulnerable position. As a result, the proletariat sector may face the risk of eviction.

In the agrarian society, proletariat risk eviction if they can't cope with socio-economic conditions. Those not evicted may receive government subsidies, yet resilience may not break poverty's cycle. Resilience means persisting and overcoming challenges. Despite subsidies, the proletariat sector may still struggle with poverty without radical changes.

Conclusion

In conclusion, the study offers insights into the evolving socio-economic landscape of the agrarian community under examination. Over the past seven decades, significant changes have shaped what was once a homogeneous settlement into a society marked by distinct income categories, mirroring Marx's bourgeoisie and proletariat classes. The HI category corresponds to the bourgeoisie, wielding considerable economic power and influence, while the LI category comprises the proletariat, reliant on labor for sustenance. Meanwhile, the MLI and LHI categories represent transitional groups, straddling the boundaries between the bourgeoisie and proletariat. It is anticipated that the bourgeoisie will continue to strengthen its position through technological advancements and capital investments, yielding substantial returns. Conversely, the proletariat is expected to persist in supplying labor to the bourgeoisie, often supported by government subsidies. Despite resilience within the proletariat sector, breaking the cycle of poverty remains challenging, underscoring the enduring struggle faced by marginalized settlers. In summary, while the socio-economic dynamics in the agrarian society may persist in the framework of the bourgeoisie and proletariat, immediate radical transformations may not be on the horizon. The interplay between socio-economic structures, government interventions, and individual resilience will continue to shape the community, illustrating the complexities of addressing entrenched poverty in agrarian societies.

In the study highlights the broader socio-economic dynamics observed in agrarian communities across many developing countries. Over decades, these communities have undergone significant transformations, reflecting the growing divide between the economically powerful and the labor-dependent. This stratification, significant of Marx's Bourgeoisie and Proletariat classes, is evident as wealthier groups consolidate power through technology and capital,

while the working class remains tethered to labor, often relying on government assistance. The transitional groups, caught between these two extremes, illustrate the fluid nature of socio-economic mobility. However, the persistent challenge of poverty, particularly among the most marginalized, underscores the difficulties of achieving significant socio-economic change. As seen in the community under study, the interplay of economic structures, government policies, and individual efforts continues to influence the trajectory of development. These findings are pertinent to developing countries, where similar patterns of inequality and resilience are shaping the future of rural and agrarian societies.

Acknowledgments

Officials from Mahaweli System H, Peasants of Eppawala GN and Kiriamunukole GN, Level 2 undergraduates of the Geography and Development Studies Honours program at the University of Kelaniya, and staff members Lakmali, Safra, Hansi, and Vishmi from the Department of Geography, offered crucial support for the study's success. Special thanks to the University of Kelaniya for financial assistance.

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