

## RESEARCH ARTICLE

# "Life and Debt": Assessing the Impacts of Participatory Housing Reconstruction in Post-Conflict Sri Lanka

Vagisha Gunasekara, Mira Philips, Kulsabanathan Romeshun and Mohammed Munas

---

The Owner Driven Housing Assistance (ODHA) scheme is a donor and government supported initiative to help construct housing for internally displaced persons (IDPs) returning to their original areas of residence after the end of the Sri Lankan Civil War in 2009. While ODHA is a commendable initiative for rebuilding the lives of those displaced by war, available evidence indicates an increase in household debt among the beneficiaries of such housing schemes and their vulnerability to livelihood insecurities after resettlement. Based on an analysis of the socio-economic status of ODHA beneficiaries in the northern Sri Lankan districts of Mullaitivu, Kilinochchi and Jaffna, this paper concludes that the financing modality of the housing programme has had a catalytic effect on indebtedness among beneficiaries. An inadequate understanding of the social, economic and cultural contexts that define the lives of beneficiaries on the part of donors and implementers appears to be contributing to unintended and negative repercussions of housing assistance. This paper illustrates how post-war participatory development projects such as the ODHA scheme can further exacerbate the vulnerability of war-affected populations, unless donors and policy makers have a holistic understanding of the varying contexts that define the experiences of those receiving development assistance.

---

## Introduction

At the end of the Sri Lankan Civil War in 2009, roughly 150,000 houses in the Northern Province – a region heavily affected by fighting between the Sri Lankan military and the Liberation Tigers of the Tamil Eelam (LTTE) – needed to be repaired or reconstructed (IFRC 2013). A number of international and local non-governmental organisations (NGOs), United Nations (UN) agencies and

bilateral development assistance organisations stepped in to assist the Sri Lankan government by providing financial and technical support to rebuild these damaged houses.

Sri Lanka has a long and successful history of people-centred and owner-led approaches to housing, enabling many of the reconstruction programmes in the Northern Province to integrate principles of community participation and involvement into the housing process. Alongside state-led and state-sponsored projects, multiple international NGOs implemented housing projects that fall

under the broad umbrella of 'Owner-Driven Housing Assistance (ODHA).' A key operational modality of ODHA, common to many international NGOs, is to physically involve the household members in building the house and financially contributing to the construction process.

The following study stems from widespread curiosity and concern among state officials, international and local NGOs and civil society actors regarding the negative impacts of participatory development projects such as ODHA on war-affected regions. A 2012 study by the World Food Programme (WFP) found that newly resettled households struggle to generate sufficient income to cover the costs of reconstructing their houses (WFP 2012). A mid-term evaluation of the housing programme found that, while beneficiary satisfaction is high in ODHA projects, there is chronic indebtedness among these households (AETS 2012). Furthermore, the evaluation revealed that vulnerable, war-affected families are now struggling to repay loans taken to reconstruct their houses, and therefore recommended an assessment of indebtedness among beneficiaries of ODHA projects (*ibid.*).

This study was conducted in 2013/14, when little was known in Sri Lanka about the socio-economic status of newly resettled communities. By examining debt amongst ODHA housing beneficiaries living in the northern districts of Mullaitivu, Kilinochchi and Jaffna, the study intends to shed light on how issues such as indebtedness are linked to the development interventions (i.e. housing), as well as to the broader political economy in which post-war development takes place. Specifically, the research on which this paper is based seeks to explore the socio-economic impacts of increased debt amongst housing beneficiaries, the reasons that drive beneficiaries to borrow funds for housing, and finally, the underlying explanations for why some beneficiaries experience increased vulnerability than others. The purpose of this article is to channel lessons from Sri Lanka to inform conceptual and operational

dimensions of housing interventions that are based on the much-celebrated paradigm of 'bottom-up' reconstruction.

### Relevant Literature

Though still a preferred alternative to top-down approaches, bottom-up reconstruction models have come under scholarly scrutiny in recent years (Hilhorst et al. 2010; Edwards & Hulme 1996; Long & Long 2002). In their research on livelihoods interventions, Hilhorst et al. (2010) contend that implicit assumptions regarding the realities of people living in war-affected settings hamper the operationalisation of well-intentioned participatory approaches. For respondents who have been displaced multiple times and lived in temporary locations, the sense of ownership, stability and independence that comes with a permanent house is of tremendous importance. Local ownership is crucial to the success of any development intervention since it is an important way to ensure that the needs and priorities of beneficiaries are being addressed. It is also a way of supporting programmes that are intended to continue even after the departure of donors from a local or national context.

However, Cockburn and Barakat (1991: 6, cited in El-Masri and Kellett 2001: 538) argue that problems surface when interveners assume that this ownership and belonging 'can be planted *right at the beginning* by putting the responsibility with prospective inhabitants through their involvement' (emphasis added). Thus, while the efforts of participatory development in recognising the interests and agency of the beneficiary recipients are certainly important, the interests of the interveners and beneficiaries may not always be aligned (White 1996: 7). El-Masri and Kellett (2001: 538) believe that in order to improve the sustainability and overall positive impact of 'bottom-up' participatory interventions, communication with beneficiaries at the local level, including a greater emphasis on understanding their social and economic contexts, must be increased. El-Masri and Kellett advocate for

an 'interactive group process in which professionals and users are equally involved in the shaping of the reconstruction process' (ibid.).

Furthermore, research cautions about the degree of assistance that more vulnerable sections of the community need for engaging in reconstruction, and urges that implementers be mindful of the time allocation constraints of those engaged in livelihood activities (Barenstein 2006: 5; White 1996: 8). These factors are likely to have an impact on the financial situation of the household members, either in the form of lost income due to engagement in construction work or increased cost due to insufficient management of the construction. This speaks to the argument that, though reconstruction efforts aim to be based on a thorough contextual reading, the nature of operational modalities and weak learning capacity make adjustment to ground realities difficult (Hilhorst et al. 2010). At a conceptual level, this paper aims to illuminate this argument by discussing evidence from Sri Lanka's post-war housing programmes.

### **Support to conflict-affected people through housing in Sri Lanka: an overview of the programme**

Sri Lanka's experience shows that participatory development interventions are undoubtedly a preferred alternative to strictly donor-driven, top-down decision-making. The state-sponsored Million Houses Programme (MHP) implemented from 1984 to 1989, for example, assisted families in building their houses. It encouraged close collaboration between administrators, politicians and local populations to facilitate regular feedback loops and consultation, and a set up a financing modality that provided flexibility for households to contribute either money or labour (International Alliance of Inhabitants, N.D). While MHP was deemed a great success, its implementation faced many challenges regarding the selection of beneficiaries, lack of flexibility in the loan guarantee system, heavy bureaucracy and complex repayment system (ibid.).

The ODHA projects implemented in the post-2009 period differ from MHP in terms of programme features, as well as the context in which they were applied. This paper uses findings from an assessment of a multi-donor housing project, 'Support to conflict-affected people through housing in Sri Lanka,' popularly known as the 'Housing Project.' The assessment examined the links between beneficiaries' indebtedness and their participation in the Housing Project in order to understand economic and social impacts of bottom up reconstruction programmes.

The Housing Project was funded by the European Union (EU), AusAid and the Swiss Agency for Development and Cooperation (SDC) and implemented by UN-Habitat (UNH) and SDC (AETS 2012). The donors and the implementing organisation adopted a 'home-owner driven' approach, which was intended to 'empower the beneficiary families to take charge of their own recovery process' (UN Habitat, 2016). It began in January 2011 and ended in December 2014, covering all five districts in the Northern Province (Jaffna, Mullaitivu, Kilinochchi, Vavuniya and Mannar). The core activity of the project was to provide basic permanent housing to IDPs who had returned to their place of origin.

The Housing Project followed an owner-driven housing reconstruction approach and adopted the modality, technical specifications and beneficiary selection process developed by the North East Housing Reconstruction Programme (NEHRP) (World Bank, 2012, p. 9). NEHRP was intended to facilitate the reconstruction of houses in the north and east of Sri Lanka, and was celebrated for its successful formula in ODHA. In both NEHRP and the Housing Project, housing assistance was provided through cash grants, and a potential beneficiary was required to meet the following four eligibility criteria: 1) the main beneficiary had to be permanently settled in the village; 2) a regularised land title was required; 3) the household had to show evidence of financial assets; and 4) the house in need of reconstruction had to have been destroyed by war (ibid. p. 3).

The Housing Project also ensured that the applicants had not already received housing assistance from another source, since multiple housing development projects were taking place at the same time.

A mid-term evaluation of the housing project found that approximately 93 per cent of the beneficiaries reported a low income and 22 per cent fell into specific vulnerable groups (i.e. households with disabled members, single-headed households, female-headed households) (AETS 2012: 18). Selected beneficiaries were given either LKR 550,000 to reconstruct a house or LKR 250,000 to repair a house, based on their requirements. The total cost of reconstructing a house at the time of this research amounted to LKR 750,000, which meant that the beneficiary household had to contribute to the balance. The grant money was disbursed in five instalments during a construction period of nine months. In addition to the financial contribution, the beneficiaries also had to volunteer their time to build the house.

### **Methodology<sup>1</sup>**

The research methodology included three components: a quantitative survey, triangulated by qualitative field research and key person interviews. The quantitative survey was conducted in 347 households in the districts of Jaffna, Mullaitivu and Kilinochchi, while in-depth qualitative interviews were conducted with project staff and relevant government officials in Colombo, as well as the three districts. A total of 347 households out of a total of 40,126 households committed to ODHA were surveyed.<sup>2</sup> Kilinochchi District represented 41 per cent of total houses committed to receive support from the programme, while Mullaitivu represented 34 per cent, and Jaffna represented 25 per cent (UNHABITAT 2013).

In selecting households, it was important to receive responses from households that had similar experiences of war. This was due to the rough assumption that most resettled households would have had comparable

levels of debt resulting from conflict prior to their involvement in the ODHA scheme. It was therefore a way in which to isolate housing-related debt from other forms of debt. Given the limited time, resources and personnel, as well as the security situation in the areas being assessed, the study team made an imperfect but pragmatic choice to survey households based on the stage of construction of their houses. This sample included households that had 1) started the construction of the house and obtained external financial support for construction from the housing project; 2) received at least one instalment; and 3) completed the housing construction supported by a donor. The sample also included another category of households that had received notification and/or confirmation of donor support for construction or reconstruction of a house, but had not started the construction process.

The majority of in-depth interviews of households were carried out in Mullaitivu district, which was purposely selected because of the complexity of issues in this district compared to other areas, including land problems, conflict-affectedness, poverty and vulnerability. The field team also experienced less interference from military personnel in Mullaitivu during the quantitative data collection phase, in comparison to Kilinochchi and Jaffna districts. A considerable amount of information on the above issues was also gathered in Kilinochchi district, where a pilot study was conducted in the Poonahary DS division of Kilinochchi. In order to test whether the selected households in Mullaitivu were outliers or 'special cases', the research team triangulated the information with beneficiaries in Kilinochchi in a Focus Group Discussion (FGD) and carried out three in-depth household level interviews in Maruthankerni (Jaffna). The quantitative and qualitative data collection of this study was carried out from October 2013 to March 2014.

### **The general socio-economic context of the study locations**

Three decades of civil war have taken a toll on the economic, educational and demographic profiles of the people originating from Sri Lanka's northern districts.<sup>3</sup> As data from the Household Income and Expenditure Survey of Sri Lanka indicates, these areas are generally characterised by low household and individual incomes (DCS 2011) low education attainment (particularly at high levels among household heads and females) (Romeshun et al. 2014), a high female population (52 per cent)<sup>4</sup> (DCS 2011)<sup>5</sup> and a young age demographic (33 per cent of the population is aged less than 15 years and 60 per cent between 15 and 18 years) (Survey and Census of Population and Housing – 2012). These are factors that are likely to have a negative effect on the household's income generation potential (Klassen et al. 2001; Lemus et al. 2013).

### ***Employment, Income, Expenditure and Debt***

There are several salient features of economic development in northern Sri Lanka that have bearing on regional employment and livelihoods. The government's reconstruction strategy for the north was to rebuild infrastructure. The heavy focus on large infrastructure has invariably diverted attention away from the development of roads to remote villages, construction of digging wells or small harbours for fishermen and reparation of irrigation tanks. As a result, the livelihoods of communities where this research was conducted are not yet stable. The agriculture sector in the north and east, for example, continues to recover from the conflict, with arable land still largely inaccessible due to landmines and military occupation.

While there have been attempts to revive farmlands that were not cultivated during the war, numerous crop failures, unpredictable rain patterns and fluctuations in market prices for agricultural produce have affected

both the cash crop cultivators in the Jaffna peninsula and the paddy cultivators in the Vanni region. A combination of multiple crop failures and new mechanised harvesting practices has led to a fall in the demand for agricultural labour and severely affected mostly landless individuals. Similarly, the proliferation of trawlers from Tamil Nadu poaching in the northern seas has destroyed fishing livelihoods. The mass exodus of migrant labour to the Middle East, where a limited but steady income is possible, can be attributed to the livelihoods losses in recent times. Those left behind in the northern labour force, formerly engaged in agriculture or fishing, are now moving to masonry and roadwork, which are in demand due to the state-sponsored rebuilding programmes. However, this demand for labourers is also decreasing as the reconstruction and road-building boom is nearing a close.

As such, households find it difficult to secure a consistent income stream for managing daily expenses; this situation leaves very little room for savings. The German Technical Cooperation Agency (GTZ) conducted a survey in 2009 indicating that the north and east uncharacteristically display a lower savings rate of 65 per cent against the country average of 75 per cent. The report attributed this disparity to the conflict (GTZ 2010). Another classic post-war condition is the lack of movable and immovable assets,<sup>6</sup> which exacerbates income insecurity and drives households to borrow funds for consumption and other purposes. Only 23 per cent of the households reported owning land other than what they live on and that could be put to productive use. The report indicated that there has been a clear decline in livelihood assets, such as livestock, farming and fishing equipment.

**Table 1** provides the work profile of sampled households of the current study and, as can be seen, most workers (61 per cent male and 38 per cent female) engage in casual labour that does not guarantee a consistent income or other employment benefits.

The average income of the households in the study was compared to the rest of the population in order to assess whether the former are more (or less) vulnerable to income poverty, which is one dimension of overall vulnerability. At LKR 19,707, the average income of the households in the sample is significantly lower than that of the national average, which is LKR 36,451. The sample average is also much lower in comparison to the average household income of LKR 23,712 in the Northern Province (DCS 2012). Consumption<sup>7</sup> per surveyed household is less than 50 per cent of the national average, and the average consumption of the households is significantly lower than the corresponding figure of LKR 25,656 in the overall Northern Province. Female-headed households appear to be at the bottom, recording an average expenditure of LKR 14,210, which is roughly one-third of the national average, and only 40 per cent of the provincial average. Worryingly, female-headed households also show an average expenditure per month that is higher than their monthly income (approximately LKR 1,000), which is a possible reason for indebtedness.

Ownership of and access to land are critical issues among displaced populations, and given that land is among the mandatory eligibility criteria for a housing grant, these issues have had particular implications for the implementation of owner-driven housing projects. In Mullaitivu, disputes over land result from lack of documentation, boundary

issues and irregular land distribution from the conflict period. Returning previous owners are a problem for many housing beneficiaries and these disputes invariably cause delays in the construction process. To some extent, these issues are being resolved via negotiations between the current and previous owners. In instances where returnees do not possess ownership of the land, the Divisional Secretariat temporarily allocates a plot of state land to the housing beneficiary and informs the implementing agency that the qualifying housing beneficiary can relocate there. No titles or deeds are given to the housing beneficiaries, so as to prevent them from thinking that it is actual proof of ownership.

Additionally, the post-war opening of the northern consumer market to mainly Colombo-based businesses has led to a consumption binge, which in turn has affected household balance sheets. The reopening of the A9 highway has enabled retail businesses to flood the northern market with consumer goods that are seen as novelties by northern consumers. The aggressive marketing campaigns of retailers offering instalment plans has lured individuals into a consumerist lifestyle in which they are making payments for products with savings and remittances. Credit used for consumption, which is now common in the north, has led a community known for its tradition of saving (Katiresu 1905) into a quagmire of debt, especially given that livelihoods have been disrupted by the lack of steady incomes.

	<b>Agriculture/ Fisheries/ Business/Trade</b>						<b>% of gender of respective population</b>
	<b>Own</b>	<b>Casual Labour</b>	<b>Private Sector</b>	<b>Public sector</b>	<b>NGOs</b>	<b>Unpaid and other</b>	
Male	28%	<b>61%</b>	6%	3%	2%	1%	46%
Female	13%	<b>38%</b>	24%	14%	3%	7%	13%

**Table 1:** Work Engagement.

Source: Assessment of socio-economic status of ODHA housing beneficiaries in Mullaitivu, Kilinochchi and Mannar, Centre for Poverty Analysis (2013/14).

Banks and financial companies have been encouraged to provide credit, taking advantage of the expanded consumer market. Branches of commercial and licensed specialised banks have increased by 25 per cent between 2010 and 2011<sup>8</sup> while in parallel, finance, pawning and leasing institutions have increased their network in the north, creating competition in the provision of financial services. Whilst competition brings positive benefits to consumers on the basis of lower interest rates, studies in the microfinance industry indicate that it can also result in issues ranging from deteriorating performance to customer over-indebtedness (Bauer & Meier 2012).

Banks have assessed the default rate for loans in the Northern Province to be low or zero (LBO 2013). However, individuals that were interviewed indicate that debt is an issue especially among those building houses, that they are increasingly finding it difficult to pay back loans and that they may forgo their mortgaged items (Srinivasan 2013). The Sri Lankan Household Income and Expenditure Survey indicates that 62 per cent of the households<sup>9</sup> surveyed had borrowed from at least one source. A survey conducted by the Centre for Poverty Analysis' (CEPA), based on a sample of 1,377 households in Jaffna, Mannar and Trincomalee, found that 69 per cent of the surveyed households were in debt, indicating that indebtedness is relatively higher in the conflict-affected areas (Mayadunne et al. 2014).

Livelihood insecurity, land disputes and a consumption binge led by the sudden increase of financial and retail services are thus a part of the socio-economic reality of the Northern Province. The success of schemes such as ODHA will depend on the extent to which the government and NGOs engage with these contextual realities as part of their initiatives.

### **ODHA and Indebtedness in Sri Lanka *Is there a debt problem?***

A 'debt problem' in this paper indicates situations in which a household delays payment of instalments or only pays interest, as these

are indications that it has borrowed beyond its capacity. If households can make the repayment of capital and interest on time, then indebtedness by itself is not an issue.

The average debt from our samples in all three locations is LKR 152,489. Jaffna has a higher average debt (LKR 224,700) than Kilinochchi (LKR 142, 536) and Mullaitivu (LKR 117, 250). One explanation for this may be because Jaffna was not the epicentre of violence during the civil war, and a relative sense of 'normalcy' existed there even prior to 2009. While households with at least one disabled member appear to have similar level of debt in comparison to the sample average (LKR 150,317), female-headed households seem to have lower levels of debt compared to the rest of the sample (LKR 127, 863). This may be largely due to the fact that female-headed households do not have the required collateral (i.e. gold and/or other assets) to obtain loans.

The data indicates a strong relationship between the type of livelihood and household indebtedness. Households that primarily engage in public sector work borrow higher amounts, but as previously stated, this cannot be categorised as a 'debt problem' since their consistent income generation means they are more likely to repay the loans. Furthermore, they may be borrowing for investment as opposed to consumption, unlike the rest of the population. The potential creditors willing to lend money to debtors that fall into this category are vast in number since these are considered to be 'good debtors'.

In contrast, other households borrow money and 'roll' the fund so that their daily expenses, including household maintenance, are covered. They tend to borrow from multiple sources and use one loan to pay off another, either fully or partially. This is typically the case with households that survive on the daily wage labour of its members. For those who run their households by engaging in daily wage labour, work is irregular and income is inconsistent. As a result, they borrow more frequently and face difficulties in

repaying the loans. A third group among the indebted has even fewer options to earn a living. This category includes female-headed households and households with disabled members, who are restricted in the type of daily wage labour they can offer, either due to incapacities caused by physical or mental disabilities or care obligations that prevent women from working late or travelling to other villages to find work. There are limited sources of borrowing for this third group since most creditors in the community are aware of the lack of the debtor's capacity to repay.

### ***Factors Causing Housing Beneficiaries to Borrow Funds for Construction***

Although housing beneficiaries borrowed for a combination of reasons (food, health, repayment of debts etc.) both housing construction and livelihoods factored heavily into these combinations, with 48 per cent of households borrowing funds solely for the construction of their houses. In contrast, 19.2 per cent and 8.1 per cent said they borrowed solely for livelihood purposes and a combination of construction and livelihoods, respectively. Thus, houses and livelihoods seem to be top priorities among borrowers.

The housing grant that was given to beneficiaries was LKR 550,000,<sup>10</sup> which is a grant ceiling imposed by the previous Sri Lankan government. At the time the study was conducted, it was already established by the implementing organisations and the people receiving houses that LKR 550,000 was not enough to complete each structure. Ironically, the very people categorised as 'vulnerable' by the donors and implementers were expected to contribute the balance funds and labour. During interviews with project staff, it was revealed that the architects of the project (donor and implementing organisations) assumed that access to legitimate credit options would allow beneficiaries to borrow and finance their share of the housing project. A common response given by implementers involved in housing construction was 'anyone who builds a house has to borrow. But loans

have to be taken from legitimate sources; the money has to be carefully managed; and the borrower has to repay in a timely manner.' This indicates that the donors' and implementers' ideas of 'bottom-up' 'participatory' housing was limited to the expectations of beneficiaries' contribution of labour and funds. The practical challenges of borrowing and repayment were not factored into the conceptual framework.

Moreover, to this day, there are no low-interest housing loan schemes for those affected by the war in Sri Lanka. Housing loans, which are comparatively lower in risk, require documentation that IDPs do not possess. In addition, houses need to be completed within nine months and households need to raise funds quickly to obtain each progressive instalment of the grant. Households have therefore been left with no choice but to borrow from high-risk sources that offer quick cash and require little documentation. Hence, most households that were interviewed pawned gold<sup>11</sup> that they owned in order to finance the construction of their houses (**Table 2**).

Housing beneficiaries borrowed irrespective of their socio-economic conditions, though socio-economic status did have an impact on how much they borrowed. However, as creditors prefer to lend to debtors that are likely to repay, low-income families and families with widows and disabled members tended to borrow less compared to those families with stable income sources. This is due to the relative lack of assets of low-income families and household units with widows and disabled members, which are used as collateral to obtain loans. When the debt-free households and those that did not borrow for housing were excluded from the analysis, 248 households reported to have borrowed for housing purposes. Housing-related debt ranged from 0.3 per cent of total household debt to 100 per cent, with 141 households reporting that all of their debt was due to housing. On average, 88 per cent of household debt appears to be for housing construction.

Increased borrowing among housing beneficiaries is strongly related to increased costs

Method used for raising additional funds	% of households involved in Housing Construction
Pawning	68%
Own Funds earned during the period	28%
Informal Borrowings	27%
Loan – Formal	27%
Family and friends	12%
Own Funds, savings	10%
Selling Movable and Immovable Assets	9%
Microfinance	3%
Gift	0.5%

**Table 2:** Means of raising funds to meet additional housing costs.

Source: Assessment of socio-economic status of ODHA housing beneficiaries in Mullaitivu, Kilinochchi and Mannar, Centre for Poverty Analysis (2013/14).

of construction, which fall into either 'avoidable' or 'unavoidable' costs. 'Unavoidable costs' include the costs of labour required to build larger houses, escalation in the price of building materials, lack of water for construction activities and deteriorating quality of roads, which makes the transportation of materials more difficult. The housing project prescribes minimum standards for a house with which beneficiaries should comply. However, there is in-built flexibility that provides recipients with the 'option' to deviate from the design features while adhering to minimum standards. Therefore, the costs incurred by housing beneficiaries to increase floor area and to make aesthetic and other structural changes can be categorised as 'avoidable costs'.

An analysis of completed houses reveals that households adhering to the standard design spent, on average, an additional LKR 210,000 (40 per cent of the grant amount). Those that did not conform to the standards spent an additional LKR 352,000 (65 per cent of the grant amount). The maximum additional cost spent on completed houses was LKR 1,000,000, which is more than double the grant amount. The data reveals that even those households that conformed to

the prescribed sizes made changes to housing features that cost more (i.e. type of roof or flooring). While this study did not calculate the exact per centages of avoidable and unavoidable costs, it is evident that the majority of households incurred additional costs due to a combination of the following factors: 1) they built bigger houses; and 2) they built houses with features that were more expensive and not part of the prescribed design.

#### ***Social, Cultural and Economic Factors Influencing Housing Construction***

For most beneficiaries, the 'house' was not just a structure or living area, but a symbol of 'status' and upward mobility. A house was also a family investment – property to be transmitted to the next generation. Therefore, it is important to understand the cultural context in which reconstruction takes place, as this can serve as an example of how donor/implementer and beneficiary interests or goals may not align.

There are also important religious factors to take into account prior to starting the construction process. The Hindu science of architecture, *Vaasthusastra*, dictates the structure

and location of a house and its inner rooms. If a house is not built according to astrological calculations it is believed to affect the prosperity and luck of the incumbent dwellers. As such, any deviation from *vaasthu* rules can bring misfortune (Subramaniam 2003: 170). Beneficiaries reported that a *vaasthu* expert must visit the land prior to construction in order to decide the placement of the house, the directions that each room must face and the measurements of the house. This expert also instructs on the length of the rooms, particularly the room that houses the religious shrine. Though ODHA regulations set the standard measurement for a house at 23 feet by 21.5 feet, according to astrological calculations, 23 is not deemed a 'lucky' number<sup>12</sup>; therefore, the *vaasthu* expert typically advises the household members to opt for longer houses (at least 27 feet), which undoubtedly has cost implications. During field interviews, the team observed an additional concrete slab in the shrine room, a very common *vaasthu*-related feature that also drives up construction costs. Interviews with beneficiaries revealed that there was little concern about additional costs in instances where decisions were made to extend the floor area.

Certain structural features of a house also present different messages about the social status of its inhabitants. For example, a gable-roofed house, which is proposed by donors because it is a cheap alternative, is linked to low socio-economic status. In response to requests by Technical Officers of the implementing agency to construct a gable roof instead of a hip-end roof as a cost-cutting measure, Kalaivani, a 38-year-old widow in Mullaitivu queried: "*Do you want others to identify my house as a widow's house?*" In Kalaivani's case, she clearly does not want to make explicit her widow status, as it means that she will be treated as a less-than-equal member of the community in which she is newly resettled.

Through the construction of larger houses, beneficiaries who enjoyed a higher social and economic status prior to displacement

attempted to reconstruct their pre-war image of social status by building relatively larger houses. The desire to recreate their previous social status was also evident in the type of building materials that were used; for example, expensive timber such as *Pala* (iron wood) and *Muthira* (satin wood) was used for the doors, doorframes, windows and roofs.

#### **Other Reasons for Indebtedness**

There is strong evidence to support the lack of sustainable livelihoods as a factor driving up indebtedness among housing beneficiaries. The average household expenditure (LKR 17,785) is lower than the average household income (LKR 19,700). However, this income is insufficient to supplement the additional expenses of construction, and families are left with no option but to borrow money, therefore compromising their longer-term household financial sustainability.

During the research process, it was also observed that beneficiaries had poor understanding of financial and banking terminology. Over half of the households surveyed did not know the interest rate of their loans or whether it was subject to varying interest rates. Moreover, those who borrowed for construction reported that money related issues caused them anxiety, as they could not understand the language used by the banks. Only heads of households who had completed secondary school indicated that they were more comfortable in joining conversations related to finance; they also repaid loans regularly since they had carefully planned their household expenses.

As pawning gold is the most common collateral for loans, most borrowers paid only the interest on the loan that was sufficient to retain the gold for another year; the capital of the loan was often unpaid. In the northern part of Sri Lanka, gold is not just a symbol of economic value, but social and cultural as well. Thus, borrowers expected to recover their gold from the bank once their economic situations improved, and would give up their gold only under critical financial duress. Among the surveyed households, there is

generally a positive attitude that incomes will rise and that they will be able to settle their debts. However, livelihoods recovery has not occurred as quickly as expected, resulting in increasing debt levels and causing debtors to borrow more in order to settle previous loans. For the most vulnerable, such as families with disabled heads of household, selling mobile and immobile assets was a strategy for coping with indebtedness. A 57-year-old male from Mullaitivu said:

*I will repay the debts before I die. The paddy land is valid for LKR 400,000. I will sell it and repay the money if needed. They trusted my wife and gave the money. I want to protect my wife's dignity. I sold a pipe for LKR 2000, which is worth LKR 4000. Likewise, I will sell my lands even for half price in order to settle this deal.*

#### **Analysis of the Impact of Debt on the Short-Term Socio-Economic Wellbeing of Beneficiaries**

As discussed earlier, a permanent house provides a sense of independence and stability for families who have experienced multiple displacements. It also represents physical safety, particularly to those who are vulnerable, such as female-headed households. Although households have gone into debt constructing their homes, owners see the permanent house as less expensive to maintain in comparison to a house built with temporary materials, such as palmyrah leaves for the roof that need to be changed every year.

The process of owner-driven housing also seems to strengthen ties within families. For example, the involvement of children in making decisions regarding construction activities (i.e., painting the house) is indicative of familial cohesion. In general, communities expressed satisfaction with donor assistance.

*When we got housing we felt happy. But now, we are not happy as much as*

*we were before, because we struggle to complete this house. If I build a house, the children will be living a peaceful life and will be happy in future. If they did not give LKR 550,000 grant we would never have been able to build a house. It is a big support. The children are saying that they are going to plant flowers and paint the house. We (my neighbour – a widow – and I) completed work quickly according to their instructions. (Karthika, Mullaitivu, Female, 43)*

While beneficiaries perceive ODHA positively, the ensuing increased levels of debt point to the flaws of the intervention's financial modality. The expectation that newly resettled IDPs contribute both labour and money does not factor into account the peoples' struggle for daily survival in the Northern Province of Sri Lanka. The surveys revealed that the opportunity cost of contributing one's labour towards construction came to LKR 995 per day for a casual labourer. The pressure to finish a particular stage of construction in order to qualify for the next instalment of the housing grant also put beneficiaries under tremendous stress.

White (1996: 8,10) cautions against assuming that various types of participation exist in a vacuum and that their associated interests do not overlap. As such, while this article categorises ODHA as an instrumental participatory model, one should not privilege its efficiency and cost-effectiveness as the dominant goals. This risks sacrificing the chance for substantive participation amongst beneficiaries and ignores their involvement as an important method of legitimating and sustaining housing interventions. Additionally, it ignores the fact that beneficiaries, though incurring costs through participation, may view their inclusion as an opportunity for empowerment. Thus, if participatory models are to be differentiated from top-down programmes, one must question how well the various interests of beneficiaries are accommodated.

It is also important to understand both the short-term and the long-term vulnerabilities that are caused by indebtedness. For instance, women are found to experience more stress from debt than men. Since debt has an impact on health, family life and job performance, it is necessary to study debt from a social angle (Dunn & Mizaie 2012). Furthermore, no matter how cost-effective, prescribing 'flexible' reconstruction specifications and mandating the contribution of labour may not be enough for substantive participation. In-depth and on-going consultation with beneficiaries is required so that donors can go beyond efficiency and better understand their aspirations, as well as the limitations their context may present for participation.

#### ***Impacts of the ODHA Schemes on Beneficiary Households***

There are various ways in which the ODHA schemes have affected beneficiary households. Our findings show that housing construction has impacted significantly on beneficiaries' food consumption patterns. It is found that construction had led to a decrease in the consumption of fruits and proteins such as dried fish, fish, meat, eggs and milk. In contrast to those in the waiting list for the grant, beneficiaries who had begun constructing their houses had moved toward less expensive food items, limited portion sizes, reduced dietary diversity and fewer meals a day, with elders eating smaller quantities of food so as to sustain younger members of the family. Additionally, the need to provide meals to workers constructing the houses exacerbated the situation. Many households had to borrow to feed the workers, while struggling to feed their own children. During food shortages, some households adopted severe coping strategies, such as skipping or combining meals, consuming leftovers from dinner for breakfast and prioritising the children and elderly. Under extreme circumstances, as Priya, a 37-year-old female noted:

*We borrow food items from the shops, we have around LKR 10000 debt from*

*the grocery shop. If debt increases without repayment they do not continue to give things on credit. At such times we reduce our meal quantities.*

Changes in the beneficiaries' food security cannot be attributed only to housing construction. However, in a context where newly resettled IDPs struggle to earn a living for daily survival, the ineffective financial modality of the housing project seems to have driven them into a downward spiral. The marked decrease in donor assistance (possibly due to Sri Lanka's elevation to a Middle-Income Country), particularly the cessation of the WFP dry rations programme, seems to have impacted families struggling to revive their livelihoods. The 'timing' of the housing programme also seems to play a role in restricting beneficiaries' wellbeing. The housing programme commenced soon after the termination of the WFP initiative. As such, it is possible that the observed food insecurity may not have existed had the WFP's activities operated in parallel with the housing programme.

Meeting the cost of education also poses a major challenge for these households due to increasing household expenditure. Despite the financial hardships, households prioritise education related expenses because they view it as a way out of poverty. However, due to their limited income, they often have to seek alternative strategies for meeting expenses, such as borrowing money and seeking-in-kind donations from social networks.

Another impact of the exposure to severe conflict is that families incur higher health expenditure in relation to other comparable families that have not experienced war first-hand. Physical and mental conditions such as trauma, shrapnel wounds and disability need frequent medical treatment. Households have to borrow funds to meet such expenses. In the event that treatments are lengthy and the recovery is long, families not only increase their debt burden, but also lose time that could have been allocated to income-generating activities.

*During the war my son got injured, he has 32 stitches and he does not have a gallbladder. Therefore he cannot engage in any hard work. If he gets sick we have to bear that expenditure as well. Two months ago he got sick, and we were admitted to the hospital for ten days. (Maala, Mullaitivu, Female, 52)*

Critical and specialised medical treatment can require travelling to distant but well-equipped hospitals, which in turn incurs high costs. Many interviewees stated that families forgo some of the crucial and necessary health expenditure as a result of excessive borrowing. However, foregoing necessary health expenditures may not be purely due to the housing construction process, but rather to a combination of factors, including the impact of the conflict and insufficient income.

The findings of this research indicate that while owner-driven housing is not the sole driver of household debt, it plays the role of a catalyst of indebtedness owing to its exploitative and inequitable financing modality. In war-affected areas, people have accrued unmanageable debt because they are unable to cover the financing gap between the government-approved grant amount (LKR 550,000) and the actual cost of their house. Given the bleak livelihoods opportunities in war-affected areas and the inconsistency of income for families, households are unable to repay loans and are often caught in a vicious cycle of debt, negatively affecting their socio-economic status and wellbeing.

## **Conclusion and Policy Recommendations**

This study set out to examine the impacts of ODHA on increasing indebtedness in three districts in northern Sri Lanka. The research found that participation in the owner-driven housing project has played a catalytic role in driving a significant proportion of households into a quagmire of debt. However, indebtedness of the surveyed households preceded the construction process due to limited income-generating opportunities in

the north. The total grant amount provided to housing beneficiaries proved insufficient to complete a standard house prescribed by the implementers, thus causing beneficiaries to borrow funds to supplement the construction of their houses. The lack of low-interest housing loans tailored for the realities of IDPs in the north led to beneficiaries to instead opt for high-risk borrowing.

Debt related specifically to housing construction, however, can be attributed to increased costs of construction, some of which are unavoidable. Donors and the Sri Lankan government did not factor in unavoidable costs, like that of transporting material to areas with dilapidated roads. Avoidable costs were due to the building of bigger houses and structures with features that differed from the prescribed standards, whether due to cultural factors or the desire to elevate the family's social status. This finding reveals that, while the flexibility allowed by owner-driven housing programmes is appreciated, the beneficiaries' desires, 'wants' and dreams of a bigger structure may result in negative and unanticipated externalities that in turn can have an effect on self-perpetuated indebtedness.

When allegations of indebtedness resulting from owner-driven housing are vocalised, donors can also find themselves in a difficult situation. As such, the solution is not to revert to the previous approach in which homeowners had no say in their future home, but to make subtle improvements on the current model of owner-driven housing. It is advisable that implementing agencies maintain a consultative process with housing beneficiaries, continuously flagging potential pitfalls of opting for a bigger house with different features and discussing ways in which additional costs of housing construction could be reduced. This discussion should be initiated at the inception of the project, as well during various stages of the construction process.

Another recommendation is for donors to dispel the presumption that the structure provided by an owner-driven housing programme is somehow the 'full and final' outcome, without room for further

expansion or enhancement. Furthermore, it may be useful to recommend the possibility of 'joint-houses'; even though the 'one house-one family' concept has become commonplace, some families have the preference and capacity to live together in a relatively large compound, which may help in keeping construction costs low and nurture a sense of unity in extended families.

As a remedy to the flawed financial modality of the housing project, both the state and the donor community may look into developing a low-interest housing loan scheme as a form of reparation to those affected by war. Alongside such interventions, it is wise to advise the resettled communities about short- and long-term financial planning, money management and careful spending. For better results, this should be an initiative that is carried out throughout the construction process, rather than a one-time workshop.

The main 'culprit' of indebtedness is the lack of sustainable livelihoods and increase in poverty due to three decades of civil war in Sri Lanka. The engagement in casual labour emerges as a serious socio-economic issue that arguably drives households into indebtedness and forces them to borrow funds for consumption and other purposes. Although not explored in this paper, numerous anecdotal accounts of individual suicides due to extreme indebtedness and inability to repay loans are indicative of a serious social problem to which the only solution remains the restoration of sustainable livelihoods and the creation of viable employment options for communities in the Northern Province. Heavy militarisation of the northern areas, including the military takeover of farming and other income-generating ventures that are typically operated by private entrepreneurs, potentially hinders the creation of new employment opportunities for civilians.

The added costs of the housing construction process leave households no other option but to borrow funds from a wide array of banks that are eager to lend money. For further study, it would be interesting to

analyse how the influx of financial institutions in the north of Sri Lanka or other conflict/disaster-affected areas has impacted indebtedness. How do people perceive these institutions and what are their experiences in borrowing from them? This can also be tied to the concern of when to 'time' owner-driven housing projects. While the question of whether or not restoring sustainable livelihoods should precede housing assistance is a 'chicken and egg' debate, the self-perpetuating cycle of indebtedness in the context of an unstable income stream cannot be discounted. In northern Sri Lanka, a parallel process of sustainable livelihood creation and housing reconstruction would be highly beneficial, since livelihoods and house ownership appear to be the two most important challenges faced by the local population.

While an instrumental participatory development model, such as ODHA, aligns with the interests of many donors in terms of efficiency, it may do little to help exceptionally vulnerable households. Households that are female-headed, or have one or more disabled members cannot be expected to participate in a manner that is equal to those that are not as vulnerable. Female-headed households, in particular, struggle to contribute their labour to the housing process. This necessitates the replacement of a 'one-size-fits-all' method with housing assistance that is tailored to address specific challenges of certain groups.

In summary, a combination of limited livelihood opportunities, added costs of housing construction and timing of the ODHA programme may have resulted in increased and continuous indebtedness amongst beneficiary households in Sri Lanka. As El-Masri and Kellett (2001: 538) argue, "bottom-up approaches to reconstruction should focus on process and not product and on development rather than building." Owner-driven housing programmes and other reconstruction efforts should take a holistic perspective and attend to the social, economic and cultural contexts within which the target populations of such development initiatives are situated.

## Competing Interests

The Swiss Agency for Development Cooperation – Sri Lanka (SDC) funded this research. The authors declare that they have no competing interests.

## Notes

- <sup>1</sup> This paper is based on research commissioned by one of the donors of the housing project, and was carried out at a time when the Sri Lankan government was hostile towards any investigative activities in the northern and eastern parts of the country. During this time, all organisations or individuals required the approval of the Presidential Task Force, which oversaw all humanitarian and development interventions in the aftermath of the war, in order to conduct research anywhere in Sri Lanka. Researchers were subjected to heavy surveillance by the military while carrying out their activities, causing these restrictive circumstances to shape the choice of districts and locations in which the fieldwork was conducted.
- <sup>2</sup> The number of households to be sampled to provide results at 95% confidence level was determined to be 342 houses using the Australian National Statistical Service statistical calculator.
- <sup>3</sup> The survey covered only Jaffna and Vavuniya Districts that were relatively less affected by the recent (2009) conflict in the Northern Province. Thus it is likely that with the inclusion of Mannar, Killinochchi and Mullaitivu Districts, which bore the brunt of destruction during the final conflict period, the average incomes in the Northern Province will be even lower.
- <sup>4</sup> Due to death and migration of men as a result of war.
- <sup>5</sup> 51.8% – Department of Census and Statistics (2011). Enumeration of Vital Events – Northern Province, Sri Lanka; Department Census and Statistics (2012).
- <sup>6</sup> Immovable refers to land and property. Movable assets are vehicles, equipment, jewelry, money, etc.

- <sup>7</sup> Consumption consists of food expenditures and nonfood expenditures. This paper estimated consumption by recording household expenditure on food, rent, health, education, electricity, water, communication, transport, fuel (petrol), household fuel (LP gas or firewood), interest payments on loans, capital payments on loans and other miscellaneous expenses.
- <sup>8</sup> Branches increased from 267 in 2010 to 333 by the end of 2011. CBSL (2012) Economic and Social Statistics of Sri Lanka 2012, Central Bank of Sri Lanka.
- <sup>9</sup> Survey based on 19,958 households, with 34% pawning; 25% borrowing from banks; 16% retail shops; 9% from money lenders; 8% from Employer; 4% from Finance/ leasing companies; 4% on non-consumer items on installment and 3% from others.
- <sup>10</sup> LKR 550,000 was allocated to build a house that is 550 square feet, with two lockable rooms, a kitchen and a bathroom
- <sup>11</sup> Gold is a common form of an asset, especially among people in Sri Lanka's war-affected communities. Gold operated much like a savings account during the war, as the northern economy was unstable. Most families converted their money into gold to be used as savings in the foreseeable future.
- <sup>12</sup> According to one *vaasthu* interpretation, the number 23 means "all evil events will occur in the house" [direct translation].

## References

- AETS Consortium and Cardno Emerging Markets (UK) Ltd** 2012 *Mid-term Evaluation of the Programme – Support to Conflict-Affected People through Housing in Sri Lanka & Final Evaluation of the Reconstruction and Rehabilitation Programme for North Sri Lanka*. Sri Lanka: AETS and CARDNO.
- Barenstein, J D** 2006 *Housing Reconstruction in Post-Earthquake Gujarat: a Comparative Analysis*. London: Humanitarian Practice Network, Overseas Development Institute. Network Paper No. 54.

- Bauer, J** and **Meier, T** 2012 Competition in Microfinance and Over-indebtedness: a Discussion of Empirical and Theoretical Evidence from a Stakeholder Perspective. Seminar, Microfinance and Business & Society, University of Zurich.
- Cockburn, C** and **Barakat, S** 1991 Community prosperity through reconstruction management. *Architecture and Design*, Jan-Feb: PP. 60-65.
- Department of Census and Statistics** 2011 *Household Income and Expenditure Survey – 2009/10*. Colombo, Sri Lanka: DCS.
- Department of Census and Statistics** 2012 *Census of Population and Housing*. Colombo, Sri Lanka: DCS.
- Dunn, L F** and **Mirzaie, I A** 2012 Determinants of Consumer Debt Stress: Differences by Debt Type and Gender. Working Paper. Ohio State University Available at DOI: <http://www.chrr.osu.edu/content/surveys/cfm/doc/DSI-Working-Paper-07-19-12.pdf>. Accessed 23 October, 2013
- El-Masri, S** and **Kellett, P** 2001 Post-War Reconstruction: Participatory approaches to rebuilding the damaged villages of Lebanon: a case study of al-Burjain. *Habitat International*, 25: 535-557. DOI: [http://dx.doi.org/10.1016/S0197-3975\(01\)00023-6](http://dx.doi.org/10.1016/S0197-3975(01)00023-6)
- German Technical Cooperation Agency** 2010 *Impact Assessment of Microfinance in Sri Lanka: a Household Survey of Microfinance Clients in 5 Selected ProMiS Partner Microfinance Institutions*. Colombo, Sri Lanka: GTZ. Accessed October 10, 2013. Available at [http://www.microfinance.lk/publications/2010\\_11\\_GTZ\\_Impact%20Assessment%20Microfinance%20Sri%20Lanka.pdf](http://www.microfinance.lk/publications/2010_11_GTZ_Impact%20Assessment%20Microfinance%20Sri%20Lanka.pdf).
- International Federation of Red Cross and Red Crescent Societies** 2013 *Emergency Appeal Operation Update Sri Lanka: Support for Internally Displaced People*. *Emergency Appeal MDRLK002*. Geneva, Switzerland: IFRC.
- Katriesu, S** 1905 *A Handbook to the Jaffna Peninsula and a Souvenir of the Opening of the Railway to the North*. New Delhi: Asian Educational Services.
- LBO** 2013 Sri Lanka State Bank Chief: Borrowers in Former War Zones Hardly Default. *Lanka Business Online*, January 1, 2013. Viewed 18 September 2013. Available at [http://www.lankabusinessonline.com/news/Sri\\_Lanka\\_state\\_bank\\_chief\\_borrowers\\_in\\_former\\_war\\_zones\\_hardly\\_default/1460509966](http://www.lankabusinessonline.com/news/Sri_Lanka_state_bank_chief_borrowers_in_former_war_zones_hardly_default/1460509966).
- Lemus, D M, Ishdorj, A** and **Rosson, P C** 2013 Determinants of Household Food Insecurity in Mexico. In Agricultural and Applied Economics Association's Joint Meeting, Washington DC, 4-6 August 2013.
- Mayadunne, G, Mallet, R** and **Hagen-Zanker, J** 2014 *Surveying livelihood service delivery and governance: baseline evidence from Sri Lanka*. Secure Livelihood Research Consortium. Available at DOI: [http://www.securelivelihoods.org/publications\\_details.aspx?resourceid=318](http://www.securelivelihoods.org/publications_details.aspx?resourceid=318).
- Romeshun, K, Gunasekara, V,** and **Munas, M** 2014 *Life & Debt: Assessing Indebtedness and Socio-economic conditions of Conflict Affected Housing Beneficiaries in Jaffna, Kilinochchi and Mullaitivu Districts*. Colombo, Sri Lanka: Centre for Poverty Analysis.
- Srinivasan, M** 2013 Web of Debt Looms for Indian Housing Scheme Beneficiaries. *The Hindu*, 18 September. Viewed 18th September 2013. Available at <http://www.thehindu.com/news/international/south-asia/web-of-debt-looms-for-indian-housing-scheme-beneficiaries/article5138914.ece>.
- Subramaniam, B** 2003 Imagining India: Rebellious Nationalism in the Age of Science and Development. In: Kum-Kum Bhavnani, John Foran and Priya Kurian (eds.) *Feminist Futures: Re-Imagining Women, Culture and Development*. New York, NY: Zed Publishers. pp. 160-177.
- United Nations Human Settlements Programme** 2013 *Conflict Damaged Housing Programme, Commitment and Progress*

Review as at 30<sup>th</sup> June 2013. Colombo, Sri Lanka: UNHABITAT.

**United Nations Human Settlements Programme** 2016 Support for Conflict Affected People Through Housing. Viewed 22 June 2016. Available at DOI: <http://unhabitat.lk/projects/past-projects/support-to-conflict-affected-people-through-housing/>.

**White, S C** 1996 Depoliticizing Development: The Uses and Abuses of Participation. *Development in Practice*, 6 (1): 6-15. [Last accessed: 9 January 2011] DOI: <http://dx.doi.org/10.1080/0961452961000157564>

**World Bank** 2012 *Implementation, Completion and Results Report: North East Housing Reconstruction Programme*. Colombo,

Sri Lanka: World Bank. Available at DOI: [http://www-wds.worldbank.org/external/default/WDSContentServer/WDS/IB/2012/06/27/000333038\\_20120627005859/Rendered/PDF/ICR23040P-083930C0disclosed060250120.pdf](http://www-wds.worldbank.org/external/default/WDSContentServer/WDS/IB/2012/06/27/000333038_20120627005859/Rendered/PDF/ICR23040P-083930C0disclosed060250120.pdf).

**World Food Programme** 2012 *Food Security in the Northern and Eastern Provinces of Sri Lanka – A comprehensive food security assessment report*. Colombo, Sri Lanka: Ministry of Economic Development, Hector Kobbekaduwa Agrarian Research and Training Institute, World Food Programme, funded by USAid and GIZ. Available at <https://www.wfp.org/content/sri-lanka-food-security-northern-and-eastern-provinces-2012>.

**How to cite this article:** Gunasekara, V, Philips, M, Romeshun, K and Munas, M 2016 "Life and Debt": Assessing the Impacts of Participatory Housing Reconstruction in Post-Conflict Sri Lanka. *Stability: International Journal of Security & Development*, 5(1): 10, pp.1–17, DOI: <http://dx.doi.org/10.5334/sta.434>

**Submitted:** 18 September 2015    **Accepted:** 11 May 2016    **Published:** 15 August 2016

**Copyright:** © 2016 The Author(s). This is an open-access article distributed under the terms of the Creative Commons Attribution 4.0 International License (CC-BY 4.0), which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited. See <http://creativecommons.org/licenses/by/4.0/>.

 *Stability: International Journal of Security & Development* is a peer-reviewed open access journal published by Ubiquity Press.

**OPEN ACCESS** 