Insurance schemes for loss and damage: fools’ gold?

Linnéa Nordlander, Melanie Pill & Beatriz Martinez Romera

To cite this article: Linnéa Nordlander, Melanie Pill & Beatriz Martinez Romera (2019): Insurance schemes for loss and damage: fools’ gold?, Climate Policy, DOI: 10.1080/14693062.2019.1671163

To link to this article: https://doi.org/10.1080/14693062.2019.1671163
Insurance schemes for loss and damage: fools’ gold?
Linnéa Nordlander a, Melanie Pill b and Beatriz Martinez Romera c

aFaculty of Law, University of Copenhagen, Copenhagen, Denmark; bFenner School of Environment and Society, Australian National University, Canberra, Australia; cFaculty of Law, University of Copenhagen, Copenhagen, Denmark

ABSTRACT
Insurance schemes are a widely supported form of finance mechanism to address climate change-induced loss and damage, and are part of the Warsaw International Mechanism for Loss and Damage. This paper reviews active insurance schemes for loss and damage by exploring existing critiques. Novel insights into the fundamental challenges that insurance schemes face are then examined, in particular in the context of common but differentiated responsibilities and respective capabilities, intergenerational equity, economic and gender inequality, and human mobility. The analysis concludes that, despite their popularity among policy makers, insurance schemes seem ill-suited to address the full range of loss and damage. Therefore, pursuing these schemes, without backstopping from international finance, might undermine the objective of responding to loss and damage in a comprehensive manner. Consequently, it may be advisable for policy makers to consider how to overcome the apparent challenges in order to ‘insure the uninsurable’.

Key policy insights
- Existing insurance schemes are ill-suited to fully respond to climate change loss and damage, given the increased frequency and severity of sudden onset events, slow onset events, and non-economic losses and damages.
- Insurance schemes fail to align with principles enshrined in the climate change regime, in particular the principle of common but differentiated responsibilities and respective capabilities (CBDR-RC) and intergenerational equity.
- Insurance products do not take economic inequality or gender considerations into account and loss and damage stemming from human mobility does not lend itself to insurance solutions as currently conceived, in certain circumstances.
- If insurance continues to be pursued as a response to loss and damage, it requires a major overhaul with innovative approaches.
- Policy makers must consider sourcing new and additional finance, reflecting the principle of CBDR-RC.

1. Introduction
As the number and severity of climate change impacts rises, attention to loss and damage in international climate change fora has increased, and with it, the pressing need to find financial mechanisms to deal with climate change harm. The potential of insurance schemes to respond to this need had been explored at the regional level through insurance pools in developing countries long before their formal inclusion as part of the Warsaw International Mechanism for Loss and Damage (WIM). Insurance schemes have garnered support as financial tools for mitigating loss and damage (Lees, 2017), but certain issues remain unaddressed, namely the lack of continued and secure finance, the inappropriateness of insurance to meet context-specific needs, and responsibility avoidance.
This paper focuses on the potential of insurance schemes to address climate-related loss and damage, with the aim of contributing to the existing literature on finance instruments in a three-fold way. First, the paper consolidates existing work – primarily stemming from policy papers, reports, academic literature, and legal sources – identifying design options for insurance schemes as a financial means of addressing climate change loss and damage (Blampied, 2016; Mahul, Boudreau, Lane, Beckwith, & White, 2011; Schäfer, Waters, Kreft, & Zissener, 2016; Whalley, 2016). Second, the paper provides an overview of the existing insurance schemes used to respond to climate change impacts and draws on recent case studies to evaluate their effectiveness. The final section analyses the unsuitability of insurance schemes in the context of sudden and slow onset events and non-economic loss and damage (NELD), and adds to the existing literature by critically analyzing insurance schemes in light of: (i) the principle of common but differentiated responsibilities and respective capabilities (CBDR-RC); (ii) intergenerational equity; (iii) economic inequality; (iv) gender considerations; and (v) human mobility.

2. Insurance for loss and damage and summary case studies

Calls for the establishment of a loss and damage mechanism to respond to the adverse impacts of climate change were made as early as 1991 (Roberts & Huq, 2015), and have since gained growing attention until its inclusion in the Paris Agreement (Article 8; UNFCCC, 2015). However, a crucial question remains over how to support a monetary response to loss and damage in an already underfunded climate change finance system. While a number of options have been discussed, much of the debate surrounds the use of insurance schemes. The 1991 proposal of the Alliance of Small Island States (AOSIS) also put forward the use of insurance to address loss and damage (Roberts & Huq, 2015). Since then, insurance has repeatedly formed part of the loss and damage debate, most recently culminating in its inclusion in the WIM’s mandate, illustrated by the indirect reference made to risk transfer and risk-sharing in the decision establishing the WIM. The WIM then incorporated insurance in its 2-year initial work plan and again in the subsequent 5-year rolling work plan. The latter includes comprehensive risk management approaches in strategic work stream C, where finding climate risk solutions through insurance is identified as a priority activity for 2019–2021 (WIM ExCom, 2017).

In addition, work stream E, in particular sub-section 1(a)-(c), focuses on securing financial instruments to address loss and damage. Further support for wider coverage provided by insurance is evident in the mandate given to the Executive Committee of the WIM by the COP to develop a clearing house for risk transfer, the Fiji Clearing House for Risk Transfer, which was launched in 2018 (UNFCCC, 2016, 2018).

Insurance is a type of risk transfer that can be used to shift the risk of loss and damage from one entity to another in exchange for a premium. One form of risk transfer is risk pooling, whereby risk can be aggregated if organized in a pool (regionally or nationally), which allows for premiums to be lowered as risk is spread both across multiple actors (Gewirtzman et al., 2018) and in geographical terms (UNFCCC, 2012). These insurance pools or schemes can exist on three different levels: micro-, meso- and macro. A summary of insurance mechanisms in operation shows that most are established on a micro- or macro-level, which is consequently where this section will focus. Micro-insurances are implemented at a local level for low-income populations and are suitable to insure crops or livestock. Here, individuals create a pool of policyholders and the payouts are made directly to the individuals within the risk pool (Schäfer et al., 2016). In macro-insurance schemes, the policyholder is a national government within an insurance pool consisting of other countries in a specific geographical region. Payouts in macro-insurance schemes are made to the respective governments who can then invest in rehabilitation measures.

Regardless of the level they operate at, insurance schemes fall under one of two types: indemnity-based or index-based. Indemnity-based insurance schemes evaluate the loss and damage after an extreme event, once a claim has been handed in, and make payouts based on this assessment. However, the assessments can result in long delays before money is dispersed. On the other hand, index-based insurance works on the basis of pre-determined parametric triggers for natural disasters, such as rainfall amount or wind speed. Once triggered, a payout is made, which results in quick relief payment as no post-disaster assessment is required. This is a major benefit of index-based insurance. Due to its particular relevance to loss and damage in the context of the climate change regime, this article deals exclusively with index-based insurance.
When looking at existing insurance schemes and insured and uninsured losses over several years, the numbers are striking. In Africa, losses from hydrological, climatological and meteorological events between 2013–2015 equated to USD 11.5 billion, of which only 810 million were insured (NatCatSERVICE (MunichRE), 2019a). Similarly, losses from tropical cyclones in the same years in the Caribbean were USD 101 billion of which only USD 44 billion were insured (NatCatSERVICE (MunichRE), 2019b). It is worth noting that MunichRE only counts major catastrophic cyclones that meet certain parameters, and therefore the uninsured losses are likely to be much higher in relation to overall losses.

In the last decade, macro-insurance schemes through risk transfer have been a popular solution at the regional level. Although only four regional insurance schemes exist, three of them cover reasonably sized and vulnerable geographical areas, namely the Caribbean, the Pacific, and parts of Africa. The first successful regional insurance scheme, which has been in operation since 2007, is the Caribbean Catastrophe Risk Insurance Facility (CCRIF). It aims to provide index-based insurance against extreme weather events for Caribbean governments and had, by 2017, made an accumulated payout of USD 100 million to its members (SPC, 2017). In the Pacific, the Catastrophe Risk Assessment and Financing Initiative (PCRFI) insurance scheme is operative. The scheme was effective in 2013 when it made its first payout of USD 1.27 million to Tonga ten days after Cyclone Ian hit the island (Bank, 2013, 2014). However, the initiative’s impact is questionable, as illustrated by a different example, namely the payout to Vanuatu in 2015 after Cyclone Pam. In this instance, the insurance covered USD 1.9 million against a total damage cost of USD 449.4 million, which equates to less than half a percent of incurred cost (Government of Vanuatu, 2015).

Their African counterpart is the African Risk Capacity (ARC), where prospective member countries must provide a spending and allocation plan in the case of a payout before entering the pool. Under the ARC, members are scheduled to receive a payout within three to four weeks of the end of the rainfall season (Capacity, 2018). However, the mechanism proved problematic when it mishandled Malawi’s extended drought in 2015, which included major crop failure. The event was exacerbated by its coupling with a rare flood just before the drought, which resulted in major food shortages in subsequent years (Richards & Schalatek, 2017). The ARC’s models initially assessed that the drought did not trigger the policy and therefore refused to make a payout. In light of the severity of the situation, the ARC re-assessed their model to reflect more realistic growing times for crops, and the policy was triggered (Richards & Schalatek, 2017). This example uncovers three major problems with climate insurance. First, the assessment process and correlated payout undermine the credibility of insurance because the parameters used to determine payouts were challenged and subsequently adjusted. Second, it illustrates that by not selecting the right or appropriate level of insurance, material damages are not covered as the sum of the payouts is insufficient. Third, while index-based insurance does not take into account the effects of interplay between climate hazards, in this case a devastating flood immediately followed by a period of extreme drought, it could be designed to do so. Extraordinary situations of this kind could potentially be overcome if regional insurance pools in developing countries were modelled after the European Union Solidarity Fund for natural disasters. In this scheme, payouts based on solidarity can be made to a country experiencing multiple disasters even if pre-set thresholds are not met (Hochrainer-Stigler, Linnerooth-Bayer, & Lorant, 2017).

Micro-insurance schemes are also being implemented in national and regional contexts. On a micro-scale, index-based insurance provides an incentive to adapt and reduce risk because the payment is based on the event and not the actual losses incurred. A farmer, for example, would therefore have an incentive to invest in more drought-resilient crops to keep losses to a minimum, as the payout amount remains the same regardless of good farming practices (Linnerooth-Bayer, Surminski, Bouwer, Noy, & Mechler, 2018). Also, good practices could potentially provide a standpoint for farmers to negotiate lower premiums. Reduced loss additionally means that more of the insurance payout can be spent on recovery. At the same time, it reduces or eliminates the moral hazard problem, whereby policyholders refrain from taking adaptive or risk-reducing measures as the insurance payout increases in conjunction with losses incurred. Micro-insurance can therefore influence individual business owners’ choice of crops, provide security in times of uncertain crop returns and encourage independence from government or aid payments.

An example of a regional micro-insurance scheme is the R4 Rural Resilience Initiative. This initiative is a risk pool involving the governments of Malawi, Ethiopia, Senegal, Kenya and Zambia, with Zimbabwe to follow,
offering insurance against drought for agricultural livelihoods. A unique feature of this insurance is that farmers have the option of providing their labour for projects that reduce climate risk in the region, instead of paying a premium into the insurance pool (Blampied, 2016). In addition, *risk transfer* is complemented with other safety net provisions such as loans and savings. It is noteworthy, however, that the programme is highly subsidized by developed country governments and charities (Linnerooth-Bayer et al., 2018) and would not be able to operate independently. This example suggests that insurance is not always a sustainable financial solution for responding to loss and damage without being backstopped by reliable international financing.\(^{12}\)

Moreover, the concept of insurance is either unknown or poorly understood in many developing countries (Richards & Schalatek, 2017, 2018). Insurance is primarily a Western concept and implementation can therefore be complex as it must be tailor-made to the cultural environment in which it operates (Baumgartner & Richards, 2019). People struggling to make ends meet tend not to see payment of an insurance premium as a priority (Baumgartner & Richards, 2019). In addition, the low uptake of insurance can be linked to levels of education and literacy, as well as the complexity of insurance policies coupled with a lack of trust in financial institutions and the government (Marr, Winkel, van Asseldonk, Lensink, & Bulte, 2016). Accordingly, insurance may in fact be unsuitable or inappropriate in many country contexts.

3. The unsuitability of current insurance schemes

Although the move towards insurance schemes as a response to loss and damage has received significant support from a variety of stakeholders (Schäfer et al., 2016), there are several problems associated with relying on insurance in this context, as mentioned above and discussed further below.\(^{13}\)

3.1. Sudden and slow onset events, and non-economic loss and damage (NELD)

In addition to the challenges presented above, insurance schemes have been criticised for their unsuitability in addressing the increasing frequency and severity of sudden onset events, slow onset events, and NELD. Traditionally, insurance schemes have required insurable events to be sudden, unpredictable, and infrequent (Gewirtzman et al., 2018). However, climate change will lead to more frequent and more severe sudden onset events, as well as slow onset events like sea level rise and desertification (Hoegh-Guldberg et al., 2018).

This change presents a challenge to the usefulness of insurance schemes since insurability criteria can no longer be met; the unpredictability criterion, for one, will become increasingly difficult to satisfy due to improved ability to predict weather-related disasters (Gewirtzman et al., 2018).

The heightened risk posed by the increased frequency and severity of sudden onset events may lead to insurance providers withdrawing coverage entirely due to its untenability (Thomas & Leichenko, 2011). Given that the insurance industry is fundamentally designed for profit, climate change poses a significant challenge. Climate change essentially guarantees that loss and damage will be incurred and that payouts will need to be made for increasing amounts as impacts intensify. As such, if insurance is adopted as the main solution to address loss and damage, then individuals, communities, and countries may in fact be left without coverage should climate impacts become so frequent and severe that the insurance market is rendered unprofitable (Thomas & Benjamin, 2017). Alternatively, increased frequency and severity of events will likely lead to high premiums, making them unaffordable (Richards & Schalatek, 2017), and similarly resulting in limited insurance coverage. This leaves policy-holders in a highly vulnerable position and indicates that insurance alone may not be an adequate or comprehensive solution.

Many losses and damages will be the result of high-certainty, slow onset impacts (UNFCCC, 2012). It is widely recognized, both by scholars and the WIM Executive Committee, that insurance is unsuitable in the context of slow onset impacts (Blampied, 2016; Durand et al., 2016; Kehinde, 2014; Roberts et al., 2017; Schäfer et al., 2016; UNFCCC, 2012; Warner et al., 2013). Slow onset events by definition fail to meet the suddenness and unpredictability criteria for insurability since they essentially guarantee an inevitable outcome and a resulting financial loss (Roberts et al., 2017). Moreover, the magnitude of the loss would often prohibit effective pricing (Kehinde, 2014). Insurance is also unsuitable to respond to sudden onset events that are a result of slow onset events. For example, insurance would not normally cover damages stemming from a severe storm...
surge (sudden onset event), caused by sea level rise (slow onset event) (Thomas & Benjamin, 2017; Thomas & Leichenko, 2011).

Insurance is also ill-equipped to address small-scale events that are considered cumulative ‘wear and tear’ but which are ultimately a result of the adverse impacts of climate change (Linnerooth-Bayer et al., 2018; Moftakhari, AghaKouchak, Sanders, & Matthew, 2017). These types of impacts typically fail to meet the unpredictability requirement. Repeated small-scale nuisance flooding, for example, as a result of sea level rise, would aggregate into prohibitively high insurance premiums as its frequency increases.

Regardless of the type of impact, NELD will take place alongside economic loss and damage. While no uniform definition of NELD exists, the UNFCCC has concluded that non-economic losses can generally be defined as items that ‘are not commonly traded in markets’ (UNFCCC, 2013). Non-economic losses can be the direct or indirect result of climate change impacts and can take place in relation to three areas: individuals, society, or the environment (UNFCCC, 2013). For example, losses of life and health relate to private individuals, whereas losses in territory and cultural heritage can be more widely seen as losses experienced by society (Fankhauser, Dietz, & Gradwell, 2014). The types of assets or subjects covered by NELD are inherently uninsurable since they lack economic value, and thus do not lend themselves to insurance solutions in their current form (Bond, 2016; Durand et al., 2016). Beyond these limitations, it can be argued that assets can have a dual or multiple value, i.e. economic and non-economic, and insurance fails to account for this dual quality. For example, a house is not only a building worth its market value, it is also a home filled with personal possessions and memories and, in many cases, represents an anchoring in a neighbourhood which contributes to a sense of community. The mechanisms used to address the loss of a house because of climate change impacts must therefore also account for these non-economic values in order to truly compensate for that loss (Thomas & Benjamin, 2019).

Insurance schemes could, potentially, be substantially redesigned to cover NELD. This could be done by coupling NELD with insured economic assets or by automatically compensating for NELD whenever a consequential climate-related event occurs. A scheme of this kind would likely need to have a parametric trigger, as indemnity-based insurance cannot apply to unquantifiable harm. However, such an approach would give license to the international community to accept the NELD endured by communities and individuals, which is to say, it would require NELD to be considered quantifiable and essentially eligible for compensation, despite being incommensurable (Wrathall et al., 2015). NELD is highly context-specific since the attachment to, and value of, certain assets or qualities depend on a given culture and tradition (Tschakert et al., 2017) and, furthermore, the subjective value of NELD can vary between premium-holders with a shared cultural background. Therefore, even if financial compensation for NELD would be acceptable to affected individuals or communities, the payout necessary to compensate for the loss and damage experienced would vary greatly between beneficiaries. This raises the risk of an inequitable compensation system, where some receive greater compensation than others for the same or comparable material loss. Conversely, if the same financial compensation were given for NELD regardless of local context, the compensation risks being inadequate in a multitude of other ways, thereby also making uniform payouts inappropriate. The problems of NELD are compounded when other relevant analytical perspectives are taken into account. Five variables are explored below.

### 3.2. Insurance schemes and common but differentiated responsibilities and respective capabilities (CBDR-RC)

The principle of CBDR-RC has its origins in Principle 7 of the Rio Declaration (UNFCCC, 1992), which acknowledges that ‘in view of the different contributions to global environmental degradation, States have common but differentiated responsibilities’. In the climate change regime, CBDR-RC was included in the UNFCCC as a guiding principle (UNFCCC, 1992), and has played an essential role in the normative development of the regime, even if different parties have varying interpretations of its breadth and reach (Rajamani, 2014). A new qualification to the principle was added in the Paris Agreement, namely CBDR-RC ‘in light of different national circumstances’. CBDR-RC can be operationalized in a number of ways, including through finance. Indeed, Richards and Schalatek (2017) argue that loss and damage forms part of the greater UNFCCC framework and, accordingly, CBDR-RC is applicable in its financing structures. In light of their limited historical responsibility and ability to pay for loss and damage, developing countries, particularly least developed countries, should not
be burdened with financing incurred loss and damage alone (Adelman, 2016). Insurance raises issues in this regard, which will be explored below.

Given that the Paris Agreement explicitly excludes liability and compensation as part of loss and damage, by virtue of paragraph 51 of decision 1/CP.21 which limits the scope of Article 8, a clear benefit of insurance solutions is that they do not require the assignment of responsibility for incurred loss and damage (Lees, 2017). This is likely a key reason for the wide acceptance of insurance as a financial solution. Since this approach circumvents the need for specific events to be linked to anthropogenic climate change (Verheyen, 2015), the use of insurance schemes may allow for an expeditious process in securing a mechanism to distribute payouts.

The avoidance of the assignment of responsibility, while convenient, is problematic if seen in the context of the CBDR-RC principle. Applying CBDR-RC to loss and damage responses should, in theory, require some recognition of the disparity between states contributing to loss and damage and their capacity to address it. Insurance (without backstopping from international financial sources) fails to account for this necessity, as it places the burden for financing climate loss and damage on developing countries by requiring them to pay for insurance premiums, without consideration for the degree to which individual states have contributed to emissions (Page & Heyward, 2017; Voigt, 2008; Wallimann-Helmer, 2015). However, if insurance schemes were subsidized by developed countries, the demands of CBDR-RC would be satisfied to a greater extent.

Due to their ex post nature, insurance schemes are ill-suited to prevent or mitigate harm (Mahul et al., 2011). To mitigate harm and work in an ex ante manner, risk reduction and adaptation measures aimed at reducing vulnerability would need to be incentivised, such as the practice of the ARC. This could be achieved through setting premiums according to risk level, and encouraging policy-holders to reduce risk, with those at a higher risk of loss and damage paying higher premiums (Estrin & Vern Tan, 2016). While those facing risks of loss and damage are unable to control the primary risk, namely the negative impacts of climate change, they may be able to reduce their vulnerability to such impacts through adaptation or risk reduction measures, and thereby secure cheaper premiums.

Nevertheless, this approach has significant drawbacks. Some states are at higher risk of incurring loss and damage due to their geographical circumstances, such as having low land elevation and/or small land mass. Applying a risk-pricing mechanism for macro-insurance would therefore result in climate-vulnerable states paying higher premiums, despite the fact that these states are generally least able to afford them, and have also contributed less to current and historic carbon emissions (Adelman, 2016; Richards & Schalatek, 2018). Higher premiums might effectively punish states that are at high risk of incurring loss and damage, which seems contrary to the CBDR-RC principle and the overall spirit of the climate regime.

3.3. Insurance schemes and intergenerational equity

Article 3.1. of the UNFCCC states that ‘Parties should protect the climate system for the benefit of present and future generations of humankind, on the basis of equity’ (UNFCCC, 1992). This principle of intergenerational equity is not new to international environmental law, and while the normative content of the principle remains debated, at its core, the principle aims to distribute resources and burdens between existing and future generations (Dupuy & Viñuales, 2018). Applied to the climate change context, Page argues that this means that existing generations should not make future generations worse off by depleting non-renewable resources without compensation (Page, 1999).

Insurance schemes entirely fail to respond to the requirements of intergenerational equity. Insurance schemes are inherently post-disaster risk tools that do not have a provision to prevent loss and damage from happening, but are designed to financially address a fraction of the loss and damage incurred. As payouts generally only cover a small amount of the damage incurred, they are not adequate to restore the status quo ante and hence, leave future generations materially, socially, and spiritually worse off. There has been little to no consideration of ways to incorporate the principle of intergenerational equity into insurance schemes in practice, but it may very well be possible. For instance, an additional share of the insurance payout could be made into an intergenerational equity fund within the impacted state. The accumulated funds could then be used for compensation payments for future generations. The viability of such a setup would, however, require further research.
3.4. Insurance schemes and economic inequality

Insurance schemes, in particular risk-pricing mechanisms, also raise issues in relation to economic equality. Persons living in poverty are often the most vulnerable to loss and damage and, when it occurs, are in greatest need of assistance in order to recover from this harm. A risk-pricing mechanism intended to prevent moral hazard may intensify the additional financial stress on those who are in greatest need of protection from climate change harm, as their high risk would make them eligible to pay high premiums.

Since insurance schemes favour current ownership structures, they also perpetuate existing economic inequality. The most economically disadvantaged would benefit the least from insurance solutions because the poor generally own fewer and less valuable assets (Roberts et al., 2017). If assets are insured and subsequently lost or damaged as a result of a climate change impact, the payout for economically disadvantaged individuals would be lower. While this appears logical, it risks perpetuating poverty (Richards & Schalatek, 2017) instead of alleviating it. Even if the material loss for the more affluent is greater, the impact of lost assets would be higher for the poor. Additionally, payouts by insurance schemes are generally insufficient in sum to fully substitute the loss incurred following a triggering event (Broberg, 2019). While payouts can be timely and thus assist the immediate recovery of a community or country (Schäfer et al., 2016), the economic relief provided by insurance payouts often constitutes only a fraction of incurred economic harm following an extreme weather event (Gewirtzman et al., 2018). In the case of the Malawi drought, for example, the insurance payout only covered about 2% of the total humanitarian need (Richards & Schalatek, 2018). Insurance payouts could thus have a limited effect on long-term and comprehensive recovery (Richards & Schalatek, 2018).

3.5. Insurance schemes and gender inequality

There is a risk of insurance mechanisms perpetuating or exacerbating existing inequality or marginalization in a recipient location (Schäfer et al., 2016), including in respect to gender inequality. The Paris Agreement preamble calls on its parties to respect, promote, and consider their obligations in relation to gender equality and the empowerment of women when undertaking climate action (UNFCCC, 2015).

In country contexts where gender inequality is prevalent, this situation will likely be perpetuated by insurance schemes as the payouts may not follow a gender-sensitive distribution model. Insurance set-ups tend to favour men (Baumgartner & Richards, 2019), despite women being disproportionately negatively affected by the impacts of climate change (Connell & Coelho, 2018; Nansen Initiative, 2015). Women are often poorer, have higher health risks and needs, and lack access to institutionalized financial services such as a simple bank account, which would be required to receive direct insurance payments (Baumgartner & Richards, 2019). In such circumstances, insurance risks reinforcing existing unequal societal structures.

An OECD Development Centre study shows that women own only 15% of land titles in non-OECD countries (OECD, 2012). Globally, practices of land and property ownership remain problematic from a gender equality perspective as ‘women in half the countries in the world are unable to assert equal land and property rights’ (Roush & Liu, 2019). These discriminatory practices can be exemplified by inheritance laws that favour male over female inheritance and create disparity in property ownership. This type of discrimination is widespread in non-OECD countries, where discriminatory inheritance laws or practice are found in 86 out of 121 countries (OECD, 2012). Thus, if insurance schemes for loss and damage are in place in these countries (with no additional measures), women incurring loss and damage would receive smaller payouts as they generally own less property and will incur a smaller material loss. In this way, insurance may perpetuate existing gender inequality in an era of growing climate impacts.

3.6. Insurance schemes and human mobility

Issues arise as to what type of assets are considered insurable by insurance providers and whether a national practice for recognizing ownership could be followed. For example, constructions on informal (squatter) settlements might not traditionally be considered insurable property. As individuals and communities relocate due to resource scarcity or land erosion, informal settlements are likely to emerge, particularly in countries with little
land mass or territory. This type of human mobility\textsuperscript{17} can already be observed in island states such as Tuvalu, where outer islanders have begun to relocate to the main island, and reside in squatter settlements along the coast (De Albuquerque, 2013). These settlements are highly vulnerable to the adverse impacts of climate change such as floods, but are considered uninsurable as persons living in such settlements do not tend to have ownership rights to the land or the constructions on the land. This creates a situation where only some are eligible for compensation for their loss and damage whereas the most economically disadvantaged and already displaced receive nothing.

Further issues arise in relation to the expected increase in climate change-related human mobility (IPCC, 2014). Addressing human mobility forms part of the WIM’s mandate under workstream D, and accordingly loss and damage solutions should be sensitive to the needs imposed by human mobility. Insurability criteria are misaligned with these needs and the consequences of irregular migration, given their lack of sensitivity to loss and damage experienced by migrants, such as that in relation to squatter settlements. Human mobility and relocation (be it planned or spontaneous) due to slow onset events and their related costs are also not considered by traditional insurance products. Planned relocation projects away from coastal zones due to climate change-related sea level rise, such as the village of Vunidogoloa in Fiji (Charan, Kaur, & Singh, 2017) or Kiribati’s purchase of land in Fiji (Office of the President: Republic of Kiribati, 2014), fall within the purview of the WIM’s mandate and should therefore qualify as an instance of climate-related loss. Current macro-insurance schemes are not designed to include cost recovery of any type of human mobility, be it planned or ad hoc, post- or pre-relocation. Accordingly, insurance schemes may be entirely unsuitable to address human mobility needs.

4. Conclusion

As the adverse impacts of climate change intensify, increasing loss and damage will be incurred. Thus, there is a pressing need for loss and damage finance solutions. Here, insurance schemes present an appealing option, as they are commonly used to compensate for loss and damage after unpredictable and discrete events, i.e. sudden onset adverse impacts.

However, insurance remains an inherently profit-driven market, so if there is no prospect of profit, companies will likely begin withdrawing coverage. In fact, the suitability of insurance will diminish over time as sudden onset events become more severe and more frequent as a result of climate change. In addition, insurance schemes fail to adequately address NELD.

This paper has also illustrated that insurance, as currently conceived, is misaligned with the spirit of the climate change regime. In their current form, insurance schemes do not embody the principles of CBDR-RC or intergenerational equity. Moreover, insurance schemes may exacerbate existing inequalities in social-economic structures, particularly in relation to gender and economic status.

Loss and damage is inherently complex and, in light of the foregoing, the potential of insurance schemes as they currently exist seems to be exhausted. Pursuing insurance as the primary tool for addressing loss and damage may distract and derail the debate from focusing on issues like sourcing new and additional finance for addressing loss and damage and making that finance available to climate-vulnerable countries and populations. For these reasons, it is concluded that insurance schemes, in their current forms, ultimately do not adequately address climate change challenges. Therefore, besides other potential tools, innovative and novel approaches to insurance schemes need to be developed in order to be relevant, effective, and just solutions to loss and damage. Overall, insurance must form part of a more holistic approach to respond to loss and damage.

Notes

1. This support is illustrated by the explicit inclusion of ‘insurance solutions’ for loss and damage in Article 8.4. of the Paris Agreement.
2. It should be noted that the idea of using insurance schemes to address natural disaster risk from climate change impacts is not restricted to loss and damage. Risk transfer and insurance were incorporated into the international climate change regime as early as 2010, through the establishment of the Cancun Adaptation Framework. Furthermore, the Hyogo Framework for
Action, under the United Nations Office for Disaster Risk Reduction, also promotes insurance as a way for developing states to better cope with the aftermath of natural disasters (Mahul et al., 2011).

3. In the time between 1991 and 2013 loss and damage came up at various COPs. The Bali Action Plan asks for enganced action on adaptation which included loss and damage. Loss and damage was placed under the Cancun Adaptation Framework in 2010 with the decision to develop a work program on loss and damage. At COP 18 in Doha, it was decided to establish institutional arrangements to address loss and damage which culminated in the establishment of the WIM. For a more detailed time line see (Roberts & Huq, 2015).

4. The Fiji Clearing House is a repository of information for insurance and risk transfer, and aims to connect stakeholders with experts that provide advice on tailor-made insurance solutions, with the purpose of increasing the coverage of insurance for impacts from natural disasters in developing countries. For further information see, unfccc-clearinghouse.org.

5. Other types of insurance instruments include risk retention and risk financing, which are usually initiated by the national government developing countries.

6. In meso-insurance schemes, an organisation (e.g. an NGO) creates a link between the insurer and an individual policyholder. Payments are made to the organisation, which then distributes payouts to the insured individual. For more on this see Blampied (2016).


8. MunichRE publishes data based on the five costliest events per year. Accounted events in the models that were run with Nat-CatSERVICE have caused at least one fatality and/or produced normalised losses ≥ US$ 100k, 300k, 1m, or 3m (depending on the assigned World Bank income group of the affected country).

9. It should be noted that the PCRFI is further not exclusively targeted at climate change impacts but also includes volcano outbreaks/eruptions and earthquakes. Pacific Island countries are discussing the establishment of a new facility that only covers climate change impacts. For further information see https://www.forumsec.org/22018-femm-pacific-islands-climate-change-insurance-facility/.

10. PCRFI is further not exclusively targeted at climate change impacts but also includes volcano outbreaks and earthquakes, but a new facility is currently being developed solely focusing on climate change impacts.

11. However, some incentives found at the micro level could, in theory, be introduced at the meso and macro levels through a tailored distribution design.

12. For studies on potential sources of finance see Durand et al. (2016), Roberts et al. (2017) and Richards and Schalatek (2017).

13. This paper evaluates the suitability of insurance schemes through the six variables described below. However, this is not an exhaustive list. Insurance may also raise other issues relating to ethnicity and distinctions between urban and rural settings, among others. However, due to the country context-specificity of these topics, they fall outside the scope of this paper.

14. Incommensurability in this context means that assets cannot be compared with any others, and therefore cannot be substituted. For further discussion of this concept, see Barnett et al. (2016) and Wrathall et al. (2015, p. 274–294).


16. Preambular statements do not impose legal obligations but do inform the interpretation of the provisions of a treaty, by virtue of Article 31 of the Vienna Convention on the Law of the Treaties (adopted 1969, entry into force 1980) 1155 UNTS 18232. Accordingly the implementation of Article 8 on loss and damage must be informed by the Paris Agreement preamble.

17. In the context of the WIM, human mobility encompasses migration, displacement and planned relocation. For further information see WIM workstream D, available here https://unfccc.int/sites/default/files/resource/docs/2017/sb/eng/01a01e.pdf.

Disclosure statement
No potential conflict of interest was reported by the authors.

ORCID
Linnéa Nordlander http://orcid.org/0000-0002-5186-0372
Melanie Pill http://orcid.org/0000-0002-7235-2094
Beatriz Martinez Romera http://orcid.org/0000-0003-3742-1311

References


UNFCCC. (2012). A literature review on the topics in the context of thematic area 2 of the work programme on loss and damage: a range of approaches to address loss and damage associated with the adverse effects of climate change. Retrieved from https://unfccc.int/resource/docs/2012/sbi/eng/inf14.pdf


