

Independent Evaluation of the African Risk Capacity (ARC)

Annex A: Global Review - Baseline Context
Assessment

27th October 2017

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Executive summary

In 2015, the UK Department for International Development (DFID) funded a long-term Independent Evaluation of the African Risk Capacity (ARC). ARC is an African-owned index-based weather risk insurance pool and early response mechanism that combines the concepts of early warning, disaster risk management, and risk finance. ARC Group comprises of two organisations: ARC Agency and ARC Limited. ARC Agency is the capacity-building and advocacy arm and ARC Limited is the mutual insurance company. The 10-year evaluation includes a two-stage formative evaluation and a two-stage impact evaluation. The first formative evaluation design framework identifies three workstreams: an organisational review, a 3-country case study analysis, and a global review. This report presents findings and recommendations from the baseline context assessment, a component of the global review workstream.

The purpose of the Baseline Context Assessment (BCA) is to provide a broad picture of disaster risk and disaster risk management trends across African Union member states, against which countries' decisions to engage with ARC can be analysed. The sample consists of 20 African Union countries, selected on the basis of region and population size. The 22 selected indicators are populated by secondary data from a range of sources. The indicators are high-level and as such the findings are relatively general and broad-brush. They are intended to complement the more in-depth qualitative findings that emerge elsewhere in the evaluation. The data will be re-populated a further three times throughout the evaluation, allowing for comparison and identification of trends over time.

Key findings from analysis of the sample

- Countries that engage with ARC, either as risk pool members or signatories, do demonstrate relatively high levels of disaster risk in general. Several countries that have engaged with ARC are projected to experience food insecurity in November 2017, as a specific indicator of risks manifestation.
- However, four of the sampled 20 countries are projected to be experiencing a food insecurity crisis (IPC Level 3) in November 2017, and are not ARC signatories. This indicates that ARC is not attractive to *all* food insecure countries, at this stage.
- None of the five upper middle income countries are ARC signatories, which could be explained by their ability and/or preference to pursue alternative disaster risk financing instruments, or less vulnerability to the risks against which ARC insures.
- 50% of the low income countries in the sample are not ARC signatories either. This shows there is no overwhelming appetite for ARC among poorer countries – a finding that could be explained by many potential reasons, several of them independent to ARC or insurance.
- ARC risk pool members, and most other ARC signatories in the sample, have comparatively high levels of net ODA per capita. This suggests that the availability of humanitarian aid is not a clear disincentive to engaging in risk transfer.
- The level of DRM policy and institutional readiness across the sample is low, with just under 50% of countries without a DRM policy and just over 50% without a DRM institution. This illustrates the challenging context within which ARC is pursuing ambitious policy and institutional strengthening objectives (eg: contingency plans, early warning systems).

- Social assistance coverage is low across the sample, and particularly for ARC signatory countries. This may indicate a lack of preparedness for distributing ARC pay-outs to benefit households. However, to qualify this conclusion, further analysis shows that social assistance coverage is not a strong determinant of DRM readiness.
- There was very high engagement across the sample with the self-reporting system of the Hyogo Framework for Action¹, which indicates high interest and commitment to DRM global governance institutions.

¹ Once the monitoring framework for the Sendai Framework on DRR is operational, the indicator will switch to reflect this.

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List of abbreviations

ARC	African Risk Capacity
AU	African Union
BCA	Baseline Context Assessment
DFID	Department for International Development
DRM	Disaster Risk Management
FEWSNET	Famine Early Warning Systems Network
GDP	Gross Domestic Product
HFA	Hyogo Framework for Action
INFORM	Index for Risk Management
IPC	Integrated Phase Classification
ND-GAIN	Notre Dame Global Adaptation Country Index
ODA	Overseas Development Assistance
OPM	Oxford Policy Management
TOC	Theory of Change
UN	United Nations
WRI	World Risk Index

1 Introduction

The African Risk Capacity (ARC) was established by the African Union (AU) in 2012 as an African-owned, index-based weather risk insurance pool and early response mechanism that combines the concepts of early warning, disaster risk management, and risk finance. ARC's mission is to develop a pan-African natural disaster response system that enables African governments to meet the needs of people at risk to natural disasters (ARC 2016). The ARC Group is comprised of two entities: ARC Agency and ARC Limited. The ARC Agency is the capacity building, educational, and advocacy arm of ARC, responsible for making AU Member States and the broader public aware of ARC's mission and goals. Engagement of countries with ARC includes a 9-12 month capacity building programme on the elements of early warning, risk modelling, contingency planning, disaster risk management and risk financing. ARC Limited is a sovereign-level mutual insurance company that provides weather-related insurance coverage to Member States.

The expected impact of ARC is, firstly, through a pooled insurance model, it should offer African countries competitive pricing for insurance products. At the national level, it should improve the ability of governments to better anticipate, plan, and respond to disaster risk by strengthening capacities, awareness, and action around DRM. Finally, at the local level, vulnerable households should be more resilient to disasters through the receipt of timely support.

In 2015, the UK Department for International Development (DFID) awarded Oxford Policy Management (OPM) the contract for an Independent Evaluation of ARC from 2015 to 2024. There are two components to the evaluation - a two-stage formative evaluation; and a two-stage impact evaluation. This report relates to the first formative evaluation.

The objective of the first formative evaluation is to test early stages of the ARC Theory of Change and provide an assessment of whether ARC is on the right trajectory towards achieving its outcomes². The evaluation uses Contribution Analysis, a structured but flexible type of analysis that lends itself to the complexities and uncertainties inherent in the ARC programme. Typically, the 'impact statement' of a contribution analysis approach emerges through the creation of a 'contribution story' rather than the result of a measured 'impact'. The formative evaluation design framework identifies three workstreams falling under the theory-based paradigm: an organisational review, a 3-country case study analysis, and a global review.

This report describes the findings from a Baseline Context Assessment (BCA), which is part of the global review workstream. This remainder of this introduction sets out the purpose of the BCA and its role within the overall evaluation. This is followed by an explanation of the methodology used for the assessment, and then a discussion of the main findings. The findings are structured in terms of risk and vulnerability; income, aid and ARC engagement; policy and institutional context; and engagement with DRM global governance institutions.

The purpose of the BCA is to provide a broad picture of disaster risk and disaster risk management trends across African Union (AU) member states, against which countries' decisions to engage with ARC can be analysed.

The BCA is based upon 22 indicators which are populated with secondary data for 20 AU countries. The selection of indicators and countries is discussed further in the methodology section below. The indicators are necessarily macro level, for the following reasons:

² For more information on the ARC Theory of Change and the evaluation design, see OPM's ARC Evaluation Inception Report.

- The data entry and analysis process needs to be relatively quick, especially as it is repeated periodically (see below);
- Indicators need to be relevant to, and consistently interpreted across, all African Union states, which represent significant diversity;
- Indicators need to have a credible data source from as many sample countries as possible, which is challenging given that many African countries have limited official statistics capabilities.

The findings of the assessment should, therefore, be recognised as relatively broad-brush and general. They will not speak to the contextual specificities and nuances that would provide a deeper explanation of the observed phenomena. However, the findings are not intended to stand alone: they complement the more in-depth qualitative methods employed elsewhere in the evaluation, as is demonstrated in the contribution story.

The data will be populated a total of four times during remainder of the evaluation period. Comparison of data over different time periods will allow for identification of trends over time in terms of ARC engagement, and the types of characteristics that appear to be associated with ARC engagement.

The assessment is particularly relevant to evaluating progress against Pathway 2 of the ARC Theory of Change, as it provides evidence relating to ARC's ability to influence policy and practice of member states. It is also relevant to Pathway 3, as it speaks to whether or not there is increasing demand for ARC products and services.

It is anticipated that the monitoring system for the Sendai Framework, expected to be operational around 2019, will provide new or improved indicators and data for this assessment. Areas where such improvements are likely, according to the current prototype³ of the monitoring system, are mentioned specifically in relation to the indicators described in Step 3.

³ Version shared with the Evaluation Team by UNISDR in June 2017, following inputs from member states

2 Methods

Step 1: Data scoping

The first step was to scope out the type, quality and accessibility of relevant data.

- Relevance was determined according to whether the data related to the three categories mentioned above.
- Type: the assessment will use secondary data, either raw data or already subject to analysis, depending on what is appropriate for the indicator.
- Quality: the data must be from a reputable source and sufficiently recent. The methodology for collecting the data, and if necessary the subsequent analysis process, must be available and credible.
- Accessibility: the data must be publicly accessible at no cost.

Having applied the above criteria, the data sources included in the scoping stage were:

- Index for Risk Management (INFORM)
- PreventionWeb
- Notre Dame Global Adaptation Country Index (ND-GAIN)
- World Risk Index
- CRED
- PREVIEW Global Risk Data Platform
- EM-DAT
- UN Central Emergency Response Fund (CERF) Index for Risk and Vulnerability
- Global Climate Risk Index

Step 2: Selecting countries for the baseline assessment

The next step was to sample countries that would be tracked in the baseline assessment.

African Union countries were first grouped according to region, with a view to selecting a fixed number from each region to ensure representativeness. We chose to select four countries from each of Africa's five regions (according to UN categories, Middle Africa, Northern Africa, East Africa, Western Africa, Southern Africa). The total sample would therefore be 20 countries out of a total of 55 African Union member states.

The selection was carried out by identifying the four countries with the greatest population in each region. The reasons for selecting population size as the sampling criteria were twofold. Firstly, it is desirable that the sample represent a large proportion of the African population. While ARC operates at a sovereign level, its ultimate objective is to reduce disaster risk at the individual level – and therefore the quantity of individuals covered is a relevant criteria.

However, this needs to be balanced with the representativeness of the survey. So the second reason for selecting population size is because it results in a sample that retains significant variation both in population size (given the previous sampling criteria of equal regional selection) and across other characteristics which might influence their engagement with ARC.

This variation was checked by applying the following descriptive indicators to the country sample:

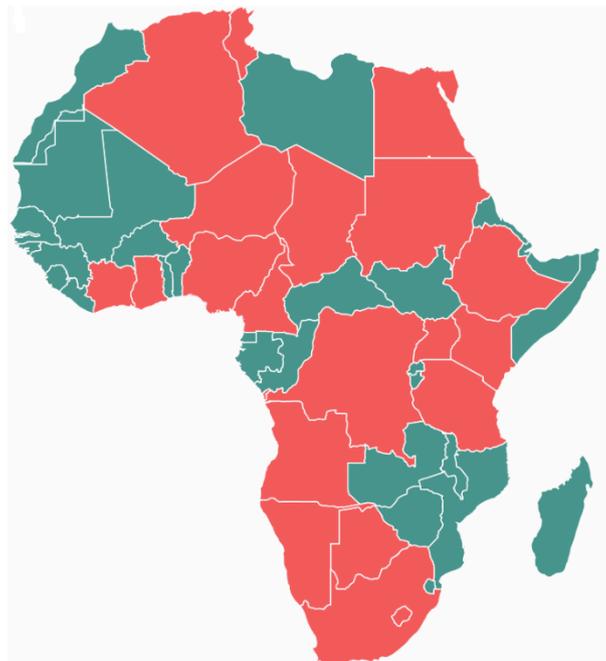
- GDP and income status: this indicator demonstrates variation across national income status. The data sources were World Bank country groups, and the UN LDC category.
- Country size (km²): this indicator demonstrates variation across geographical size of countries – and therefore, with the population data mentioned above, gives an idea of variation in terms of population density. The data source was the World Bank.

- Percentage of the population employed in agriculture (%): this indicator demonstrates variation in terms of the proportion of the population employed in agriculture. This can be interpreted as a proxy for the drought vulnerability of the population. The data source was ILOSTAT.
- ARC signatory and ARC risk pool: these indicators show whether countries are, or have been, subscribed to the ARC Treaty and/or members of the ARC risk pool. The data source was ARC.
- ND-GAIN vulnerability and readiness scores: these indexed scores of vulnerability and readiness were used to give a broad descriptive idea of countries' vulnerability and readiness in relation to one another. The data source was ND-GAIN.

Having populated these indicators, it was determined that the sample of 20 countries did appear to demonstrate sufficient variation with regards to key criteria of interest. Therefore, the sample could be confirmed.

The countries selected are shown in the table and map below.

Country name	Region
Algeria	Northern Africa
Angola	Middle Africa
Botswana	Southern Africa
Cameroon	Middle Africa
Chad	Middle Africa
Côte d'Ivoire	Western Africa
DR Congo	Middle Africa
Egypt	Northern Africa
Ethiopia	East Africa
Ghana	Western Africa
Kenya	East Africa
Lesotho	Southern Africa
Namibia	Southern Africa
Niger	Western Africa
Nigeria	Western Africa
South Africa	Southern Africa
Sudan	Northern Africa
Tanzania	East Africa
Tunisia	Northern Africa
Uganda	East Africa



Source: Piktochart

Participation in ARC was purposely not chosen as a sampling criteria. It was not desirable just to include countries already engaged with ARC, as a key purpose of the assessment is to identify trends of rising or falling DRM capacity generally and engagement with ARC, and to try to understand what characteristics may be associated with these.

Step 3: Defining indicators for the context assessment

The next step was to define and populate further indicators to describe the sample. The indicators would be limited in number given resource constraints and the focus upon broad dynamics. They needed to also be sufficiently incisive and rely on data sources that are sufficiently rigorous. The latter consideration had already been explored during Step 1.

The resulting selection of indicators are grouped into categories, as described below:

Aggregate scores (based on indexes)

This category refers to indexes of risk and/or vulnerability. These indexes are based upon composite indicators across a number of categories associated with disaster vulnerability, exposure and readiness. Their purpose in the context assessment is to illustrate how countries rank in terms of these broad categories, in relation to one another and on an absolute scale.

We chose not to fully rely on these indicators for the assessment for the following reasons:

- The nature of the ARC evaluation meant that certain specific indicators were of particular importance (and conversely, some indicators in the indexes are of less importance) - so a bespoke set of indicators would be more useful
- The indexes have shortcomings in some of the indicators and data sources that they rely upon, particularly in relation to readiness and DRM capacity. For instance, the WorldRiskIndex Report 2016 notes that strategies to respond to climate risk are relevant to coping capacity but are not included in the index due to lack of global data.

The WorldRiskIndex employs 28 indicators across four components: exposure to natural hazards, susceptibility, coping capacities and adaptive capacities. The Notre Dame Global Adaptation Index (ND-GAIN) employs 45 indicators across two categories, vulnerability and readiness. The two indexes are relatively similar in objective and in the types of indicators used – they are both included for comparative purposes.

Indicator name	Unit	Source
ND-GAIN vulnerability index score	Score (0.0 – 1.0)	ND-GAIN scores for 2015, University of Notre Dame
ND-GAIN readiness index score	Score (0.0 – 1.0)	ND-GAIN scores for 2015, University of Notre Dame
World Risk Index rank	Rank (1 – 171)	World Risk Report 2016, Bündnis Entwicklung Hilft
World Risk Index score	Score (%)	World Risk Report 2016, Bündnis Entwicklung Hilft

ARC involvement

This category describes whether the country is a signatory to the ARC Treaty, and whether it has joined any of ARC's three risk pools (2014 – 5, 2015 - 6, 2016 – 7).

While being an ARC signatory does indicate some level of interest in the products and services that ARC offers, there are limitations to the appropriateness of using 'ARC signatory' as a proxy for broader ARC engagement. Signing the ARC Agency Treaty does not require countries to make any commitments relating to their eventually taking out a policy – and indeed, only a very small number of signatories have become risk pool members. However, there was insufficient data to make other potential indicators (eg: ratification of the ARC Treaty) viable, at least at this stage of the evaluation; and the very small number of risk pool members meant that this indicator alone was judged inefficient.

A further limitation of these indicators is that they do not say anything about the political economy context of country decisions to engage with ARC (or not) – so cannot help to explain *why* countries use ARC products (and to what extent their decisions are influenced by ARC itself – RQ2)

Indicator name	Unit	Source
ARC Treaty Signatory	Y / N	ARC
ARC Risk Pool Member 2014-5	Y / N	ARC
ARC Risk Pool Member 2015-6	Y / N	ARC
ARC Risk Pool Member 2016-7	Y / N	ARC

Hazard and exposure

This category considers whether and to what extent each country is exposed to the types of hazards covered by ARC. The indicators will refer to overall exposure to disasters and specific exposure to types of disaster covered by ARC. Currently ARC only covers drought, but additional indicators could subsequently be added to reflect a broadening of the scope of policies to include other events such as typhoons and epidemics.

The data source is the Global Climate Risk Index (CRI), developed by Germanwatch using data from Munich Re's NatCatSERVICE. The CRI examines absolute and relative impacts of meteorological, hydrological and climatological events to create an average ranking of countries over a ten year period. The latest version of the CRI- used in this assessment- examines data between 1995 and 2014.

There are various limitations to these data sources and their interpretation.

- They tend to reflect disaster losses from disasters and do not capture indirect losses – which are particularly relevant to slow onset disasters such as drought.
- They do not provide a comprehensive indication of the different types of impact and loss associated with disasters, and which societal groups suffer what type of loss and to what extent.

A briefing paper published alongside the CRI data used for this indicator emphasises that it should not be interpreted as an all-encompassing analysis of climate risks but one explanation that should be understood alongside other analyses⁴.

⁴ Kreft S, Eckstein D, Dorsch L and Fischer L. Global Climate Risk Index 2016. Who Suffers Most From Extreme Weather Events? Weather-related Loss Events in 2014 and 1995 to 2014. Briefing Paper. Germanwatch. <https://germanwatch.org/en/download/13503.pdf>

It may be possible to include additional and more detailed data on types of economic loss once the Sendai Framework Monitoring system is up and running – the current version of the prototype includes indicators such as direct agricultural loss attributed to disasters, the direct economic loss resulting from damaged or destroyed critical infrastructure, number of people whose destroyed dwellings are attributed to disasters and whose livelihoods were disrupted or destroyed attributed to disasters.

Indicator name	Unit	Source
Fatalities from weather related disasters per annum	No. of people, annual average 1995-2014	Global Climate Risk Index 2016, Germanwatch
Total economic losses per annum	Million US\$ PPP, annual average 1995-2014	Global Climate Risk Index 2016, Germanwatch
Losses per unit of GDP	%, annual average	Global Climate Risk Index 2016, Germanwatch

Vulnerability and food security

This category relates to the vulnerability of populations to disasters. This is an important complement to the data on hazard and exposure, addressed in the category above.

For the purposes of this analysis two indicators were selected to show the extent of dependence upon agriculture as a livelihood source and the extent of projected food insecurity. Of course there are many additional indicators that could be said to describe vulnerability - such as relating to poverty level, household composition, household education levels, proximity of health facilities, groundwater availability and ecosystem health. For the purposes of this intentionally limited assessment, though, these two were selected on the basis of appropriateness and availability of data.

Dependence upon agriculture as a livelihood was prioritised because agriculture is the sector most affected by drought (currently the only type of hazard covered by ARC), and is widely prevalent as the dominant livelihood source for rural households throughout Africa.

Food insecurity was prioritised because it is a key dimension of what it means to be vulnerable to disasters. The data source is FEWSNET projections, published in May 2017, of acute food insecurity for 6 months ahead (November 2017). FEWS NET uses the Integrated Food Security Phase Classification (IPC) system v2.0. It refers to the following four outcomes: food consumption, livelihood change, nutritional status and mortality rates. Thresholds are specified for the outcome indicators, which are then associated with the IPC Phases 1-5 for differing degrees of food insecurity.

One limitation of the FEWSNET data source is that it only covers FEWSNET countries. Six of the countries in the sample are not FEWSNET countries – those that face the lowest drought risks (Angola, Cameroon, Algeria, Egypt, Tunisia, Botswana). Further, the IPC Phase does not investigate the reasons for food insecurity, so does not specify if that is drought or not. But the focus on food consumption and livelihoods suggests that drought would have a significant impact on the classification system.

The most recent publication of data for both these sources, at the time of data collection (i.e.: May 2017), was used.

Indicator name	Unit	Source
Employment of total population in agriculture	%	ILO modelled estimates Nov 2016, ILOSTAT
Projected food insecurity	IPC classification / % of total population acutely food insecure	Food Assistance Outlook Brief: May 2017: Projected Food Assistance Needs for November 2017, FEWS

Policy and institutional context

This category relates to the degree to which a country has policies / strategies / plans / regulations and institutional structures / process in place for disaster risk management.

It also refers specifically to social assistance coverage, as this is potentially important in determining the effective distribution of potential ARC pay-outs. The indicators currently refer to the Hyogo Framework of Action because the monitoring system for its successor, the Sendai Framework, is not yet operational. The final indicator is net ODA per capita, which is intended to be a proxy for a country's dependence upon foreign aid in its response to disasters.

Some limitations of the indicators and data sources are acknowledged as follows. While a country may have certain policies and institutions in place, they may be poorly implemented and enforced. The indicators are not unable to capture that possibility due to lack of accessible or comparable data. The institutions reflected by this data will by no means exhaustively cover all institutions that influence DRM in a particular country – which will be both formal and informal. Further, the indicators assess the extent to which a country engaged with the Hyogo Framework for Action – though, noting that merely submitting a progress report does not in itself tell anything about the findings of that report or its quality. Some desirable indicators, such as existence of natural disaster-related early warning systems, were not included because of the difficulty of finding data in a form that was readily translatable to the indicators. Conversely, some indicators that are used – such as social assistance coverage- are not necessarily indicative of DRM capacity, for instance if a country's planned response to disasters did not operate through social assistance mechanisms at all.

Once the Sendai Framework monitoring system is up and running, it may be possible to include additional indicators and data. The current prototype includes two indicators for Target E “Substantially increase national and local disaster risk reduction strategies by 2020” as follows:

- Indicator E1: Adopt and implement national disaster risk reduction strategies in line with the Sendai Framework for Disaster Risk Reduction 2015-2030
- Indicator E2: Percentage of local governments that adopt and implement local disaster risk reduction strategies in line with national strategies

In addition, Target F calls for information on ODA specifically allocated to national disaster risk reduction actions, which would improve the current ODA-related indicator. Target G calls for data on the extent and accessibility of early warning systems, which would be a useful addition to this assessment.

Indicator name	Unit	Source
National DRM policy or strategy	Y / N	PreventionWeb country pages
Designated focal point for HFA	Y / N	PreventionWeb country pages
Submission of HFA progress reports	Y / N	PreventionWeb country pages
National DRM institution	Y / N	PreventionWeb country pages
Social assistance coverage among total population	%	World Bank ASPIRE (various years depending on latest national data source)
Social assistance coverage among poorest population	% of >\$1.25 per day population	World Bank ASPIRE (various years depending on latest national data source)
Net ODA per capita	US\$ in 2015	World Development Indicators, World Bank

3 Findings

As the first iteration of the BCA, it is not possible to compare against a previous data set. Findings are therefore taken just from analysis of the current data set. In the next round of findings, it will be possible to draw conclusions from comparative analysis, as well analysis of that data set.

Because participation in ARC was not chosen as a sampling criteria, the sample involves a random selection of countries according to their participation with ARC. In line with the limited engagement across the continent as a whole, in this sample only 5% (1 country) is currently a member of the ARC risk pool, and 10% (2 countries) are currently or have previously been members of the ARC risk pool. This sub-sample is too small to meaningfully explore the question of how ARC engagement relates to other variables, and certainly not through significant statistical analysis. It is anticipated that, should the ARC ToC hold, the number of risk pool members and signatories will increase over time, resulting in a larger sub-sample, and enabling more meaningful analysis of the factors that influence ARC engagement.

Given this, a major focus of this round of analysis has been on describing the sample as a whole and considering how that may influence the ARC ToC. There is some attempt to compare 'ARC countries' against 'non-ARC countries', but this comparison is limited for the reason mentioned above.

Box 1: Legend for graphs

The following legend applies in the section below unless otherwise specified.



Green = countries that are, or have been, ARC risk pool members

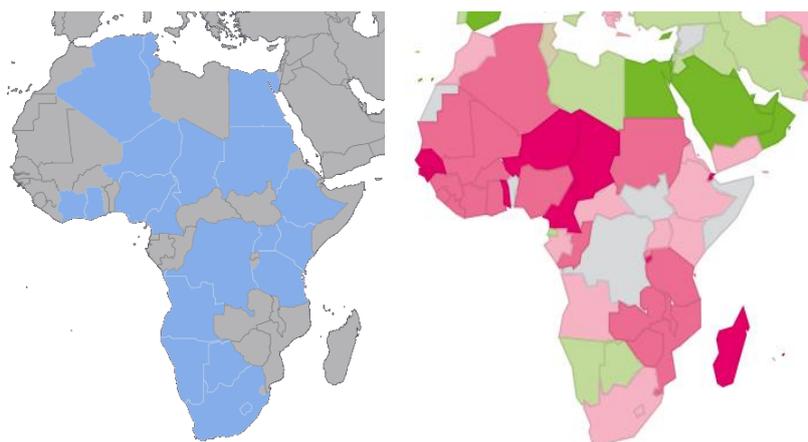
Purple = countries that are ARC signatories

Blue = countries that are neither risk pool members or signatories

3.1 Risk and vulnerability

The sample contains countries with varying levels of risk. This is demonstrated in Box 2. This variation should allow for understanding how overall risk level corresponds to ARC engagement – for instance, is it countries most at risk who are more likely to engage with ARC?

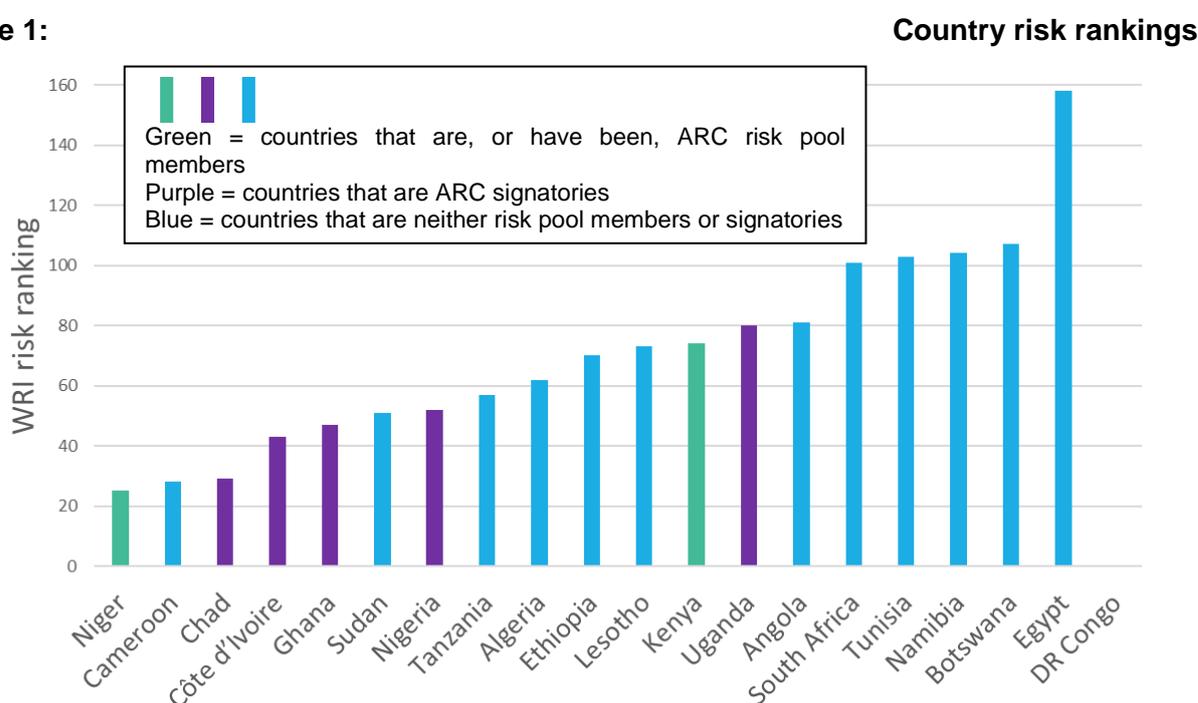
The map on the left shows the countries sampled in blue. The map on the right shows countries according to varying levels of risk – where dark green is very low risk, dark pink is very high risk, and the other shades form a continuum between these levels. The World Risk Map assesses risk according to exposure, susceptibility, coping capacity and adaptive capacity – in other words, according to measures of both vulnerability and exposure.



Box 2: Comparison of risk levels across sample

In the current sample, Figure 1 suggests that those countries who are engaged with ARC as signatories or risk pool members are relatively risky, as they are grouped around the lower WRI rankings which correspond with higher risk. It is to be expected that a risk insurance pool should be more relevant to countries who face more risk.

Figure 1:



To further unpack the relationship between ARC engagement and risk, one could consider food insecurity as a specific dimension or manifestation of risk. The BCA includes FEWSNET projections of food insecurity six months ahead, which are presented in terms of the Integrated Phase Classification (IPC) system where 1 indicates minimal food insecurity, 2 indicates food security is stressed, 3 indicates a crisis, and 4 indicates an emergency. The classification does not address the reasons for food insecurity (i.e.: drought or otherwise).

Box 3: Comparing projected food insecurity with ARC engagement

ARC Treaty Signatory?	Y	N
IPC Phase (Proj Nov 17)		
1	6	
2	5	1
3	6	4
4	1	2

Box 3 shows the relationship between countries projected⁵ to be food insecure in November 2017⁶, and countries' engagement with ARC. The two ARC risk pool members are projected to be in a "crisis" food security situation (Phase 3) in November 2017 which, as mentioned above, agrees with the expectation that ARC would be attractive and relevant to food insecure countries. While two countries (South Sudan and Somalia) are projected to be in an "emergency" (Phase 4) situation in November 2017, and are not ARC signatories, there are mitigating circumstances: both are facing significant conflict and governance challenges, which are likely to contribute food security (instead of, or at least alongside, climate shocks), and which are also likely to influence their capacity and willingness to engage with an initiative like ARC. These characteristics are also relevant in explaining Nigeria's food security emergency; and, hence, why interventions other than drought insurance might be prioritized in that case. This explanation does not hold for all non-signatory countries projected to be food insecure in November 2017; for instance, Ethiopia and Tanzania are both projected to be in "crisis" stage and do not have significant conflict or political crises. Their decision not to sign the ARC Treaty, therefore, suggests that there is no straightforward link between the food security driven by drought, and an incentive to subscribe to ARC's drought insurance products.

3.2 Income, aid and ARC engagement

A key factor of relevance to the evaluation is how national income is associated with decisions to engage with ARC. There are various considerations and possible hypotheses here, including:

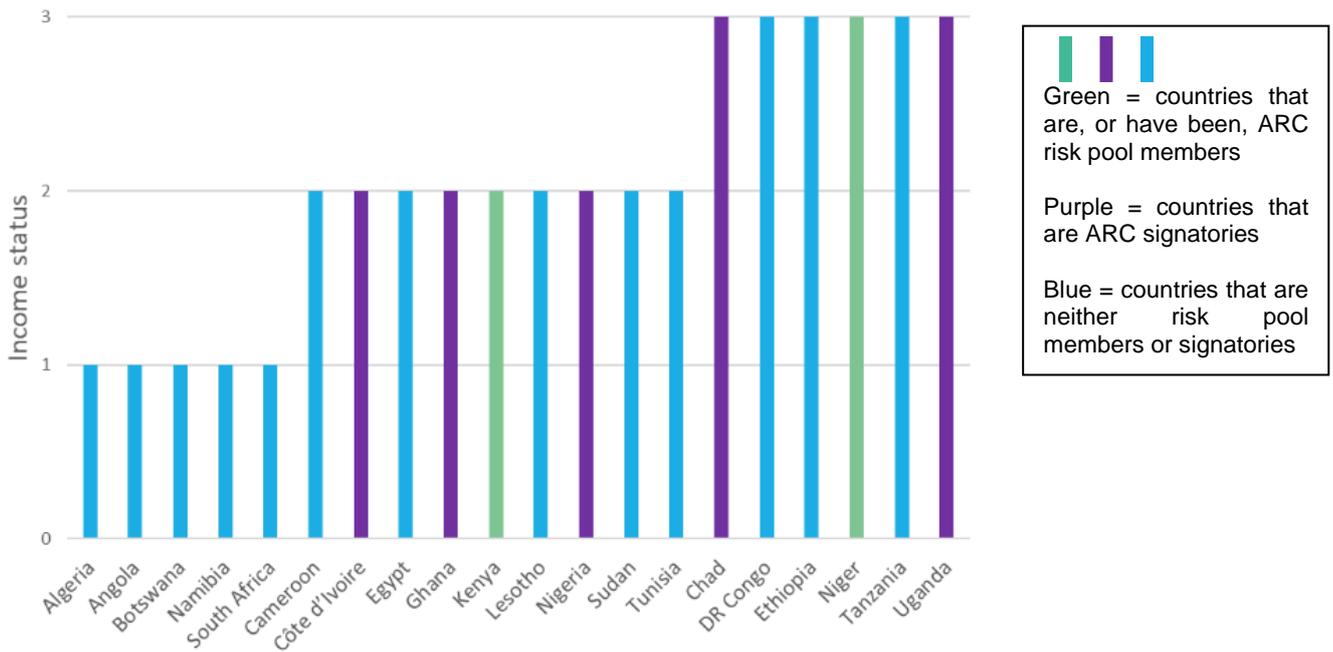
- Countries with larger economies may be willing to pay higher premiums, and more willing to pay year-on-year given the lower opportunity cost within their larger budget. Both of these characteristics have positive implications for the size and stability of the ARC insurance pool.
- On the other hand, countries with larger economies may be less likely to perceive risk pooling and risk insurance as attractive options for disaster risk financing – as they are better able to afford alternative approaches such as contingency funds which do not require premium payments and allow them to retain full ownership over the disbursement process.

Figure 2 shows ARC engagement in relation to national income status, in terms of low income (3), lower middle income (2) and upper middle income (1).

⁵ Projections were published in May 2017, and they relate just to the African Union member countries covered by FEWSNET – 25 of 55 AU countries.

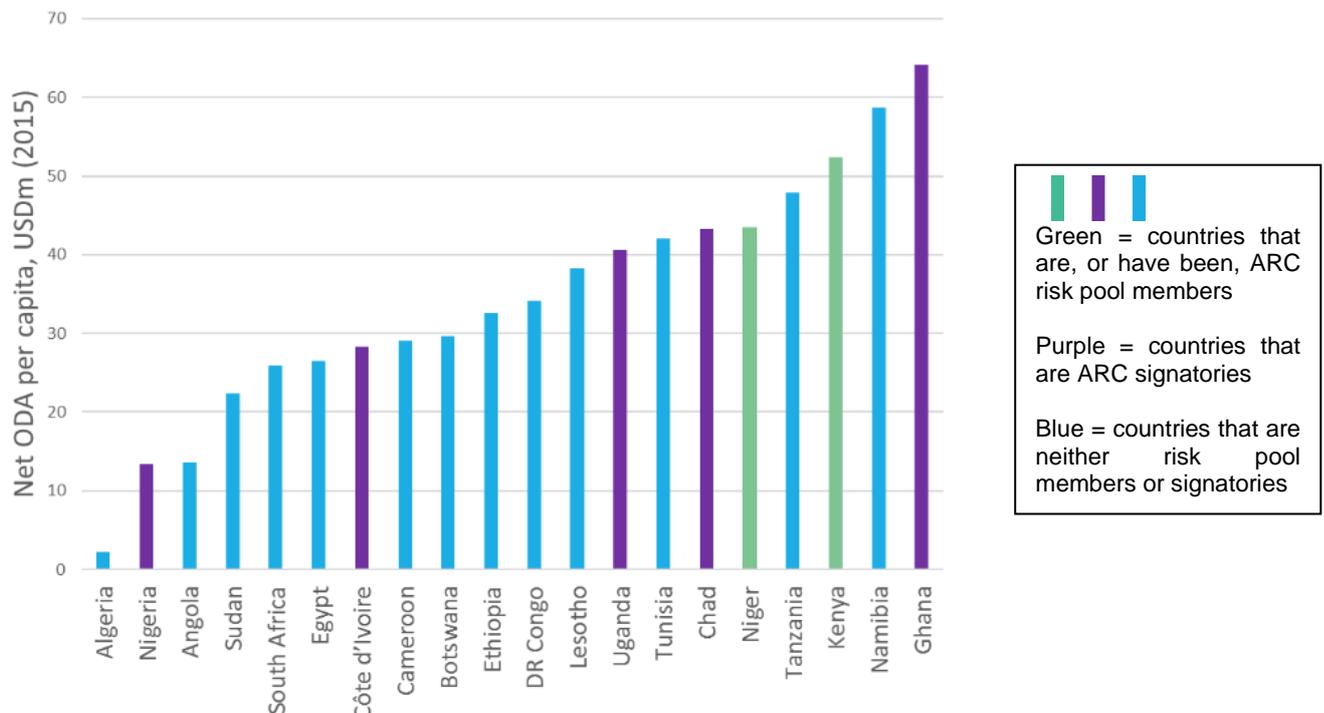
⁶ Measuring food insecurity just at one point in time does not say anything about whether a population is suffering from chronic or acute food insecurity, and whether and to what extent the severity changes over time. However for this type of assessment it is difficult to find indicators that can capture those characteristics of food insecurity – so data from one point in time can be taken as useful albeit limited alternative.

Figure 2: Comparing ARC engagement with national income level



No upper middle income countries are engaged with ARC, which could be explained by the second point above. There is relatively equal distribution across lower middle income and lower income countries. Three of six low income countries are not engaged with ARC. This suggests there is no overwhelming rationale for poorer countries specifically to perceive insurance as being in their interests (though this lack of engagement could also be explained by numerous other factors, such as inadequate technical capacity to engage or fiscal capacity to pay an insurance premium).

Figure 3: Comparing ARC engagement with ODA per capita



It is a well-known argument that the potential availability of aid in response to disasters is a disincentive to taking out an insurance policy (Clarke et al 2015, Dercon and Clarke 2016). While insurance requires a premium payment, aid is 'free' to the recipient in monetary terms. If this argument holds, you would perhaps not expect to see such a grouping of

ARC countries at the highest levels of net ODA per capita, as Figure 3 shows – and the fact that risk pool members Kenya and Niger received over USD50 million and over USD40 million ODA 2015 further suggests that ODA is not an influential disincentive to engaging with ARC⁷.

3.3 Policy and institutional context

The two pie charts below show what proportion of the sample have a national DRM policy or strategy (left hand side) and have a DRM institution (right hand side).



Just over half of the sample have a policy, just under half have a dedicated institution. From further analysis, 7 countries have both an institution and a policy, whereas 7 countries have neither. This finding suggests that ARC is operating in a region where policy and institutional readiness for DRM is relatively low⁸. Further analysis of ARC countries specifically is as follows – they are not significantly better (or worse) than the rest of the sample, though slightly more likely to have a national DRM institution. Of the two risk pool members, neither Kenya nor Niger currently has a national DRM strategy or a DRM institution.

**43% of ARC signatory countries have a national DRM policy or strategy.
54% of non-signatory countries have a national DRM policy or strategy.**

**57% of ARC signatory countries have a national DRM institution.
38% of non-signatory countries have a national DRM institution.**

This low policy and institutional readiness has various potential implications for countries' decisions to engage with ARC, and with the success of the ARC model.

- Insurance and risk pooling is complex and a relatively novel concept for many African countries. A certain amount of human and technical capacity is necessary for a government to understand the concepts and processes associated with ARC – so low levels of DRM capacity and readiness may result in a significantly lower interest in ARC from the outset and place a significantly higher burden upon ARC in terms of building interest and finding the requisite capacity for substantive engagement and meaningful country ownership.
- ARC has ambitious objectives relating to improving DRM policy (i.e.: contingency plans) and early warning systems. These objectives are challenging in themselves, and are likely

⁷ If premium financing becomes a more common feature in ARC, then this would presumably be counted as ODA – which would perhaps reverse the assumption described above, to one where if higher ODA can be taken as an indication of greater likelihood of premium, it should correspond with ARC engagement.

⁸ These indicators do not comment on the quality and scope of the policy or institution, which are of course relevant to assessing their true correspondence with DRM readiness. Further, in referring only to national DRM policies, the indicator may exclude other policies which are relevant – such as climate change policies.

to be much harder to achieve if the baseline context is so limited in terms of existing capacity and readiness.

It will be interesting to track over time firstly to what extent countries' broad DRM policy and institutional context improves, and secondly whether there is a correlation with ARC engagement.

Social assistance coverage is linked to policy and institutional readiness, as it refers to the existence and nature of mechanisms to transfer in-kind or cash assistance to vulnerable communities and households. Studies have shown that social assistance and social protection can be highly impactful as a means for populations to manage the risk of shocks (OPM 2016), and can be more cost-effective, transparent and rapid in delivering relief than traditional humanitarian aid delivery mechanisms (Dercon and Clarke 2016). It is particularly relevant for ARC's Theory of Change: while insurance payouts are made at the national level, the ultimate impact on beneficiaries depends significantly upon the availability and quality of mechanisms to transfer and translate those funds into rapid assistance.

Figure 4: Comparing ARC engagement with social assistance coverage

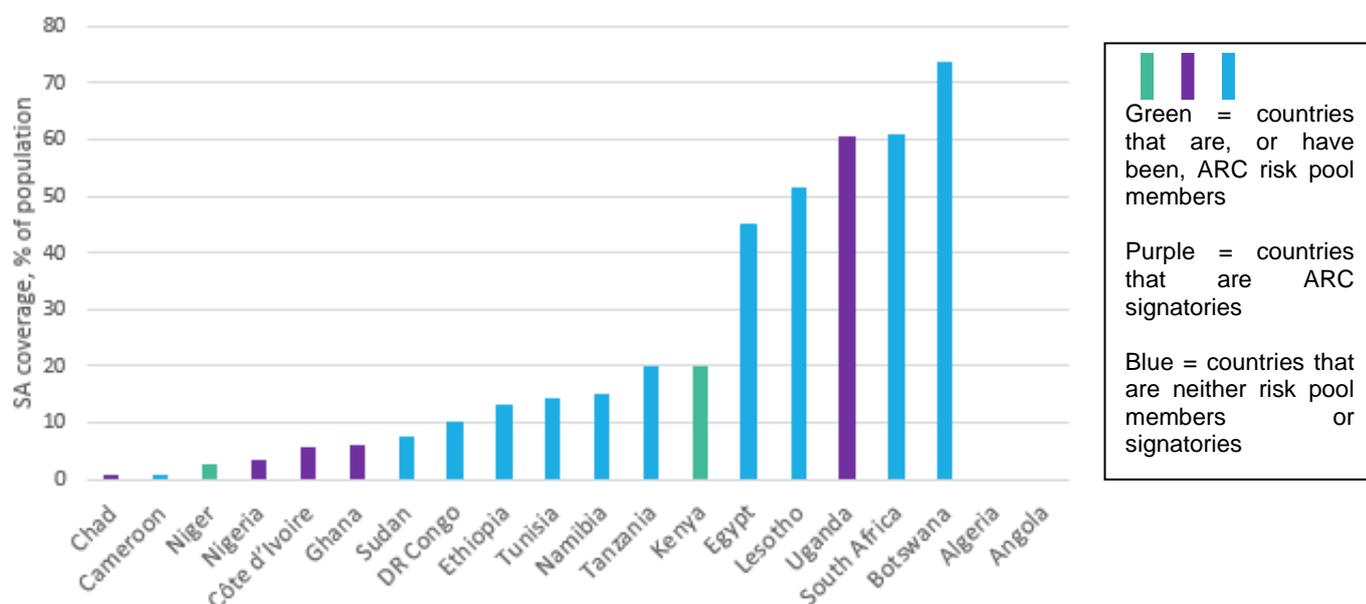
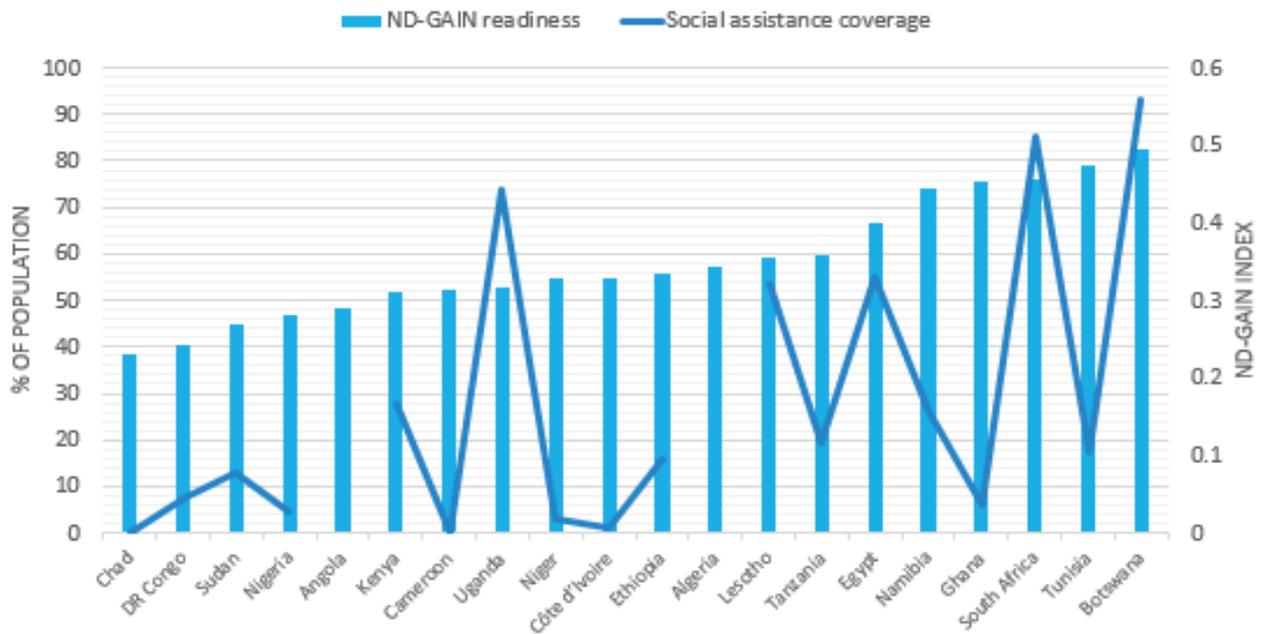


Figure 4 shows that social assistance coverage across the sample varies widely, from 0.6% of the total population in Chad to 74% in Botswana. The majority of countries, however, fall at or below 20% coverage, and 8 countries below 10% coverage, which is very low. ARC signatory countries are mainly grouped at this lower end, though Uganda and Kenya are outliers. This suggests that it may be difficult in many cases to link up ARC payments with rapid and effective transfer mechanisms, ultimately having a significant influence upon the extent to which individual households benefit from ARC pay-outs.

Figure 5: Comparing DRM readiness with social assistance coverage

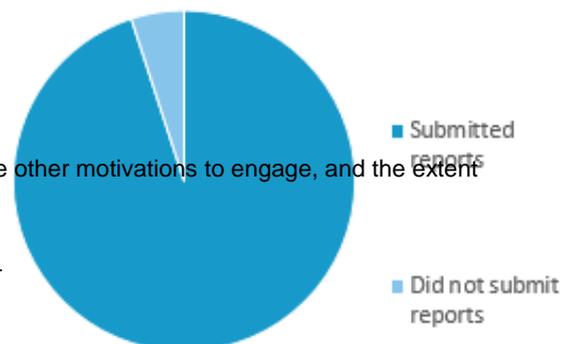


However, Figure 5 warns against associating social coverage too closely with overall DRM readiness. It shows the relationship between social assistance coverage, as a % of total population, and readiness for dealing with climate change and associated shocks. Readiness is measured by the composite ND-GAIN index, where a higher figure represents greater readiness. One would expect there to be a correlation between social assistance coverage and readiness, because social assistance mechanisms would normally count towards a country’s ability to deal with and respond to climate shocks – this assumption is relevant to the ARC Theory of Change, about how payments are translated into improvements in the lives of intended beneficiaries (though, while social assistance mechanisms are commonly used to deliver humanitarian assistance, they are not the only option). However, this graph shows a number of cases that challenge this expectation: Uganda, with the third highest level of social assistance coverage, is in the bottom half of the sample in terms of readiness ranking; Ghana and Tunisia are relatively ‘ready’ to implement actions to adapt to climate change and shocks, but have very low social assistance coverage. The lack of clear relationship may be explained by the various influencing factors that contribute to readiness other than social assistance coverage; or the variance in quality of social assistance mechanisms and systems that would affect impact regardless of formal coverage.

3.4 Engagement with DRM global governance institutions

The degree to which countries engage with DRM global governance institutions gives some (limited⁹) insights about the value that they place upon DRM and their capacity for engagement on the topic.

The BCA considers whether countries contributed reports on their DRM progress under the Hyogo Framework of Action on Disaster Risk Reduction, which was in place 2005-2015. This indicator is slightly outdated – and will be replaced with reference to submissions under the reporting system



⁹ Not too much can be drawn from this assessment, as countries may have other motivations to engage, and the extent of their engagement may vary widely.

of the Sendai Framework, the successor to the Hyogo Framework whose monitoring and reporting system is currently being designed.

The pie chart to the right shows that all countries in the sample but one submitted a report to the HFA. While this says nothing about the quality of the reports, this is nonetheless an encouraging indication of countries' perceptions of the value of DRM global governance arrangements and ability to gather at least a minimum level of data about their DRM efforts.

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