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Exploring NGOs-government collaboration strategies in institutionalising child-centred disaster resilience and climate change adaptation

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ABSTRACT

Child-centred disaster risk reduction and climate change adaptation have gained traction through projects and programs implemented by various actors worldwide. However, there remains a lack of understanding of their longer-term impact and influence on policy and practice at different levels of governance. This longitudinal research examines the processes of mainstreaming child-centred disaster risk reduction (DRR) and school safety programs at various levels. The data collection methods included participatory workshops, focus group discussions, and participant observations collected in 2008 and 2019. The findings suggest that the existence of local disaster regulation and mainstream institutions does not serve as a legitimate predictor for how likely governments adopt child-centred DRR and sustain school safety policy implementation. By adopting *hybrid* and combining approaches to DRR institutionalisation, NGOs and governments have collaboratively combined various strategies, including local regulatory change, incentives, nudging, and coercive and discursive approaches.

1. Introduction

Child-centred disaster risk reduction (CCDRR) and child-centred climate change adaptation (C4A) aim to put children at the centre of disaster governance and climate resilience policy-making [25,39]. The main objective of the CCDRR+C4A movement is to ensure that children's distinct needs, capacities and knowledge are included in planning and decision-making and to support them in enacting real change [25,26]. CCDRR+C4A has strategically aimed at educating, empowering, and facilitating children to drive overall societal resilience [2,42]. Despite not being synonymous, this paper uses the CCDRR+C4A interchangeably as they have shared the idea of advocating for children's participation in reducing disaster risk, adapting to climatic extremes, emergency planning and building resilience [2].

Over the last decade, a significant body of knowledge around CCDRR+C4A has grown, as indicated by the increase in peer-reviewed publications and grey literature from many parts of the world [2]. This includes disaster resilience education (DRE) literature and

documents relating to school safety initiatives [3]. The DRE approach is one of the Hyogo Framework for Action (HFA) imperatives and led to a worldwide government agenda on DRE (Priority 3, Key Activity II). More than 70 countries report how DRE is included in their school curriculum at one or more year levels [16]. However, the HFA view on children has been more explicit about their vulnerability and the need to build their capacity through DRE agendas. ([45], p. 9–11).

Sendai Framework push for new pathways to ensure children's participation in DRR and CCA, as it argues that "children and youth are agents of change and should be given the space and modalities to contribute to disaster risk reduction, in accordance with legislation, national practice and educational curricula" [[46], p.23].

Contrary to the one-way delivery of (a.k.a. teacher-centric) disaster education commonly followed in DRE programs, the CCDRR+C4A approach seeks to empower and include children in a participatory framework that aims to understand the risks' broader social, political, and economic drivers. "Let out children teach us" [47] was the key message of cultivating children's agency in dealing with disasters and

Abbreviations: CCDRR, child-centred disaster risk reduction; C4A, child-centred climate change adaptation; CSS, Comprehensive school safety; DRE, disaster resilience education.

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climate change. The first spike of worldwide CCDRR+C4A practice and research was marked by the shared visions and commitments from child-focused stakeholders such as Plan International, Save the Children, UNICEF, World Vision, and Child Fund [15,25,26,39,44]. The merits of the CCDRR+C4A approach have since been documented in different parts of the world, ranging from the Philippines [11,26], El Salvador [26,39], Zimbabwe [28] Indonesia [3,15] to Australia [37,42].

Existing research on CCDRR+C4A is primarily informed by results from pilot projects and driven by child-focused agencies. Therefore, findings tend to be skewed towards ‘short-termism’ [33]; therefore, longer-term outcomes are often inaccessible to observation. Therefore, this research examines the long-term outcomes of CCDRR+C4A programs implemented by Plan International, a child-focused NGO, in collaboration with other NGOs and local and national educational ministries in Indonesia over the last 12 years of CCDRR/C4A implementation.

The research objective is to understand the long-term outcomes of international/national/local interventions in mainstreaming CCDRR+C4A – as mandated by Hyogo and Sendai Frameworks. The research questions include: how do local and national actors mainstream or institutionalise CCDRR+C4A at different levels, and what forms of institutionalisation have occurred in the last 15 years? And what are the challenges and opportunities in sustaining CCDRR+C4A?

2. Theories and concepts of DRR + CCA institutionalisation

Institutions, either formal or informal rules, are human-crafted systems developed to deal with a whole range of human affairs, including human-nature relations [8,29]. Formal institutions include legislation, laws, acts/bills, codes, and regulations at different governance levels. Informal institutions include established practice, norms, traditions, values and informal arrangements that shape human behaviour [29].

Institutionalising a local development agenda such as DRR/CCA entails a long-term mainstreamed or routinised practice by public institutions such as local and national governments. Without institutionalising children’s participation and empowerment in the formal development agenda and putting children at the centre of adaptation and risk reduction, CCDRR will remain ad-hoc [[18]]. While many are aware of the need for CCDRR mainstreaming [5,27], it is not clear how CCDRR advocates develop mechanisms that systematically promote the reduction of children’s vulnerability through the implementation of the comprehensive school safety agenda.

There are many ways to mainstream DRR/CCA in the development context. Institutionalising CCDRR+C4A can manifest in many different scenarios. We defined the institutionalisation of CCDRR+C4A as any form of change from less desired (or the lack of) institutional arrangement in the past to a more desired future where alternative institutional arrangements can be achieved [5,18].

In this paper, we interchangeably used mainstreaming and institutionalisation of DRR/CCA. CCDRR+DRR can be seen as a sub-set of broader DRR + CCA mainstreaming and therefore intertwined with a broader disaster/climate risk governance framework. This section draws on the literature to explore approaches and strategies made by state and non-state actors in institutionalising CCDRR within the context of general public policy and specific public policy domains such as disaster governance and education development. Each of the approaches is selected because each explains the current progress of CCDRR+C4A mainstreaming. At least ten grand strategies that stand out from our theoretical exploration are appropriate to mainstreaming DRR + CCA with particular attention to a child-centric approach.

2.1. Legislative and regulatory reform

The HFA and the Sendai Framework maintained that the institutionalisation process requires legislative/regulatory change, resource (fiscal) allocation, and the existence of multi-stakeholder platforms to

ensure continued commitment to and implementation of the disaster risk reduction agenda [45,46]. For example, to ensure that children’s participation becomes standard practice, new laws/regulations can be drafted/endorsed to prescribe what needs to be done by local governments, educational departments, teachers and students in schools and local communities. A formal approach (as mandated by legislation) to DRR/CCA suggests that one must work through existing and complex institutional machinery, “ranging from formal bureaucratic processes and routines to existing political and social-economic institutions” ([18], p.4).

Formal institutionalisation creates new and amends existing regulations, policies, codes, planning documents, and CCDRR/C4A-related support programmes. Such a new or amended policy can also mean amending existing development planning, decisions, and governance arrangements [5]. The nature of this approach is paternalistic in that it is not recognised and practised unless there is a legal framework that regulates that imperative (See Table 1). One of the weaknesses of formal regulation, including legislation, is that they do not often lead to real-world implementation due to, among many others, a lack of incentives and knowledge [29].

2.2. Rational choice planning

In many ways, the proponent of CCDRR indicates their approach as a rational choice as they try to educate teachers, children, parents, and local and national government officials to be mindful of adopting CCDRR [18]. Rational choice theory provides a foundation for interpreting local response to climate change as an expression of entirely reasonable action made by local actors to maximise their resilience and safety by adopting adaptation and risk reduction. Their typical solution to the adaptation problem is education, awareness-raising and capacity building, developing blueprints, master plans, and strategic planning for DRR + CCA. Unfortunately, mounting evidence suggests that human beings are not entirely rational agents. In many cases, changes are driven by incentives rather than acting based on objective information and knowledge [[8,18]].

2.3. Triggering endogenous initiative

Social transformation is often relational because institutionalisations of CCDRR+C4A require shifts from exogenous intervention towards endogenous initiatives [[30]]. One of the pathways to building resilience is exogenous support from international organisations, including NGOs, in facilitating CCDRR pilot projects in low and middle-income countries. Their initiatives often manifest in pilot projects lasting from a few months to less than a few years. In theory, exogenous drivers can ignite endogenous CCDRR+C4A [30], where external inputs can be transformed into endogenous action.

2.4. Exercise discretionary power of public administrator

Local administrators and bureaucrats exercise policy discretion because they can directly adopt new innovative measures without waiting for their superiors’ instructions [23]. This depends on the existence of informed administrators who improvise (e.g. adopting ideas of CCDRR proposed by NGOs to be an innovative development program for a particular year) or add specific (additional) tasks, such as the need for evacuation maps in every school. Policy discretion that adopts CCDRR can also be exercised by schools as long as their leadership allows it. However, this approach is often not very used by local administrators and therefore is unreliable in the long term.

2.5. Incentives for change

Incentives are instruments for institutional change, but they are often short-lived if they come in as merely external projects. Schools can be

Table 1
Selected concepts of institutionalising resilience in schools and communities.

Form of institutionalisation	Policy options	Remarks and conditionality
1. Formal regulation	<ul style="list-style-type: none"> National legislation National ministerial regulation Local legislation/regulation Departmental regulations Fiscal and resource allocation 	<p>Paternalistic and coercive; It may lack incentives for the participants</p> <p>Paternalistic and coercive; It may lack incentives for the participants</p> <p>Existence of political will</p>
2. Rational planning	<ul style="list-style-type: none"> Master plan for implementation Strategic Plan 	Depending on education and human resource, and incentives, as planning alone does not motivate actors
3. Triggering endogenous driver for social transformation	<ul style="list-style-type: none"> Facilitation, Training and capacity building Pilot projects 	International/national support, including donors, must lead to local transformation and change
4. Policy discretion	<ul style="list-style-type: none"> Place-based policy improvisation School-based decision to innovate Adding specific tasks and agendas to the departmental plan 	<p>Innovative local officials who are willing to take risks</p> <p>Supportive leadership</p> <p>Innovative local officials who are willing to take risks</p>
5. Special incentives	<ul style="list-style-type: none"> Fiscal allocation for schools to establish SOPs and resilience plans Funding allocation for school safety initiatives Matching fund 	<p>Disincentives</p> <p>Incentives are prone to volatility</p>
6. Nudges	<ul style="list-style-type: none"> Embedding resilience in school's accreditation 	Non-coercive measures that nudge schools to adopt school safety measures
7. Soft institutionalisation via hubs and networks	<ul style="list-style-type: none"> Create joint secretariats at national and local levels Form local forums, including child forum and local DRR forum Knowledge hubs 	<p>Existence of funders</p> <p>Depending on incentives</p>
8. Local champions	<ul style="list-style-type: none"> Transform local proponents to be champions 	<p>Depending on incentives</p> <p>Champions need to be recognised formally and informally</p> <p>Discursive-ability of local champions.</p>
9. Following old pathways	<ul style="list-style-type: none"> Traditional pathways such as local red-cross and their youth programs and scouts. 	CC DRR and CCA are in the hands of NGO/Plan and DoE. As a result, local disaster management agencies do not see CC DRR and CCA as their portfolio. Or, if they do, this view is seen as non-conventional.
10. Hybrid institutionalism	<ul style="list-style-type: none"> Admixture of different strategies through time 	Policy options evolve from one to the other over time.

incentivised to adopt and practice emergency plans and other school preparedness measures. Resources and incentives are not always available to teachers and children in many parts of the world. Projects come and go. Good practice stops when the project ends. The shift from risk-ignorant to risk reduction occurs because actors are motivated by incentives and/or disincentives provided by formal/informal institutions. Therefore, institutions incentivise or disincentivise actors' decisions and preferences to include children in DRR/CCA. This can manifest in projects and resources or a lack of them. The future progress of

CCDRR+C4A is heavily dependent on the institutional context that structures the implementation of CCDRR+C4A agendas. This theory is often called new institutional economics theory [[8,18]].

2.6. Nudge

Institutionalisation can be in the form of nudges - a concept that proposes positive reinforcement and indirect suggestions to achieve change in practice and adoption of innovation. While steering people in a particular direction, Nudges are soft regulatory tools that preserve nudges' nominal freedom of choice by providing an opt-out or escape clause. In order words, there is complete freedom for the participants to decide what to do within their choices. What 'choice architects' (e.g. government) do to rearrange the order of choices (or the choice architecture) with the intention to shape agents' behaviour in a given situation at a particular point in time [36]. A nudge is any element of given choice architecture - excluding direct monetary incentives - that has been deliberately modified (by some 'choice architect') to influence choices [43]. For example, when national and local governments are willing to promote school safety agenda, nudges can be made by embedding safe school variables at the top of school accreditation checklists.

2.7. Networks as institutions

Networks and hubs can be seen as institutions. Therefore, institutionalising any development plan can be partly manifested as networks or hubs, including forums. The HFA promotes the idea of DRR platforms, which mainly function as forums. If institutions are the rules of the game, Networks, hubs, or forums can be seen as institutions with their own rules. Scholars have proposed the concept of 'network institutionalism' [6], which views institutions as not aggregative concepts such as governments and organisations but as real networks of human beings. Those networks comprised players from state and non-state actors and market players. In disaster risk reduction communities, forums are 'institutional hubs' that are seen as pivotal and can play a role in facilitating DRR/CCA, including CCDRR+C4A.

2.8. Local champions and discursive exercise

Institutions are abstract concepts like governments and organisations. In reality, governments are run by individuals, some of whom have the potential to be champions of DRR/CCA. Local champions can be seen as 'institutions' [18]. However, their effectiveness depends on their "discursive abilities" and legitimacy. This theory assumes a more dynamic and agent-centred approach to institutional change. In the real world, the roles of local champions can be seen as institutional solutions to unfamiliar agendas like climate change adaptation [22]. Without the promotion of new ideas, the status quo remains. New ideas allow the champion to depart from the status quo. In trying to drive the DRR/CCA agenda, local actors' discursive abilities (the ability to articulate, communicate, and promote new ideas) are instrumental for change. The practical instruments for discursive exercises can manifest in the form of local champions [22], public relations and awareness, the transmission of knowledge and ideas, training and capacity building, etc.

2.9. Pathway dependency theory

There are historical pathways that local actors sometimes use unintentionally based on historical regularities in the sense that future policy changes (e.g. child-centred DRR + CCA) are simply built on the old institutional paths. Pathway dependency theory is mindful that climate disasters, urban crises, and their impacts often create complex situations that challenge local actors to make strategic and rational decisions [17,18] about CCA and DRR, let alone CCDRR+C4A. Consequently, their resilience strategies unfold as they interact with changes in the

dynamic relationship between social dynamics and hazardous environments [18]. On the contrary, climate change adaptation policy and practice are likely to emerge incrementally. It involves unpredictable institutional arrangements because the local actors might be impossible to develop an ex-ante institutional design. This implies that resilience strategies at each level of governance result from social-historical interactions than anything planned [17,18].

3. Project background: child-centred disaster risk reduction

Plan International has piloted several projects on child-centred climate change adaptation and disaster risk reduction in Indonesia since 2007. The NGO promotes the importance of children’s participation in CCA/DRR planning in different parts of the world, from the Philippines and El Salvador, which was later replicated in Indonesia during 2007–2008. Later, it has been part of Plan International’s Safe Schools Global Programme to “promote schools as a platform for children and youth to grow safely in resilient communities with their rights respected” [34]. Plan’s Safe School has been part of the ‘comprehensive school safety’ (CSS) movement, together with many child-focused organisations (for an extensive explanation of the implementation of the CSS in Indonesia, please see [1]).

Plan International aimed to reach 1.5 million children across 40 countries by 2017 [34]. Working under the umbrella of the AADMER Partnership Group [7], Plan and other child-focused NGOs such as Save the Children and World Vision have played prominent roles in promoting ASEAN Common Framework for Comprehensive School Safety [7]. To date, Plan International remains the focal point for the ASEAN framework.

Unlike academics that tend to strictly distinguish CCDRR+C4A from other child-related program, such as school safety and school-based DRR as separate interventions, we will show in the rest of this paper that due to being heavily dependent on external funders, NGOs in Indonesia have been pragmatic about ensuring the reduction of children vulnerability through either CCDRR+C4A, school safety and/or school-based DRR programs. Despite having a national strategy, NGO activities are funded from project to project. For example, one of the DRR-CCA projects was framed as a safe school with child-centred DRR [4]. Therefore, overall, Plan Indonesia has been pragmatic in that it covers various child-focused vulnerability reduction activities, namely school-based DRR-CCA, school safety and/or safe school programs.

The NGO implements ‘Climate Change Adaptation with and for Children’ in Southeast Asia, including Thailand, Indonesia, and the Philippines [21]. In Indonesia, the child-centred DRR-CCA pilot projects were initially piloted in Rembang in Central Java and Sikka in East Nusa Tenggara in 2008. The projects were later replicated in many other districts in the provinces using different names (e.g. I am Ready Program in Eastern Indonesia during 2016–2018 [20]; Climate Change Adaptation with and for Children (In Eastern Indonesia) during 2015–2018 [21]; School-based DRR in Yogyakarta during 2009–2011 [31]; and West Sumatra [32], as well as in Jakarta.

4. Research design and methods

This study was designed to understand the long-term policy and practice changes, including the evolution of institutionalisation processes of CCDRR+C4A at district and national levels from 2008 to 2019. The authors used a mixed-qualitative method. This study can be called ‘longitudinal observations’ at schools, local and national government institutions and DRR professionals from NGOs (particularly from child-focused organisations) (Table 2). Four out of five authors (1st, 2nd, 4th and 5th) have been involved since the initial field study in 2008. Two authors (2nd and 3rd authors) have been engaged as former staff of Plan Indonesia until 2014 and project evaluators of some CCDRR+C4A-related projects in 2018.

The first FGDs with local governments and NGOs were held in Sikka and Rembang (October 2008). The final stage consists of a focus group discussion (FGD) with staff from child-focused NGOs and key government institutions - in Jakarta, Rembang, and Grobogan in a workshop (Table 2). The first author was involved in FGDs and participant observations in 2008 and 2019.

In 2008, the authors (1st, 2nd, 4th, 5th) conducted personal interviews with the stakeholders from the Local Development Planning Agency (Bappeda), Social Departments, Local Indonesian Red Cross, and local NGOs in Rembang and Sikka. In 2019, personal interviews (by the authors the 1st and 2nd authors) were held with regional disaster management offices (BPBD), Bappeda, the Educational Department, and Former Plan Indonesia’s implementing partners, teachers and heads of schools.

During the FGD and personal interviews, we ask general (operational) questions such as (not necessarily in order): (1) what changes occur at the practice and policy level? (2) what forums exist to support CCDRR+C4A in your jurisdiction (including district/schools)? (3) what measures have been taken to ensure children are safe during disasters? (4) what is the difference between the past (in 2008) and today (in 2019)?

This research has been an integral part of the research focused on CCDRR+C4A since 2008 (see [15]). All the interviews, FGDs and participatory workshops (not included in Table 2) were recorded and transcribed. In both settings (2008 and 2019), we hired professionals to transcribe all the meetings. Visual recordings (photos and videos) were also produced. We specifically coded the participants’ responses and secondary qualitative data using nVivo 12.

Overall, we would like to clarify that in our effort to understand the evolution of the institutionalisation of the child-centred DRR and CCA, we do not assume that Plan Indonesia gets the overall credit for the institutional change. However, we would also like to show that some of our documentation of the social change occurs in the context of multiple engagements with the NGO facilitating the research in 2008 and 2019 (See also [1]). We want to show the picture of the institutional landscape where different actors are involved at different levels.

Table 2
Research methods.

Methods	Period		Participants/stakeholders			Remarks
	2008	2019	Teachers	Government	NGOs	
Focused group discussion	X	X		X	X	Rembang, Sikka, Grobongan and Jakarta
Personal interviews	X	X	X	X	X	Rembang, Sikka
In-depth interviews		X		X	X	Rembang
Participant observation		Continued observation 2008–2014, 2018 and 2019.	X	X	X	Authors 2 and 3 visited the schools in Rembang and Sikka regularly from 2008 to 2014 and in 2018
Desk study	X	X		X	X	Regulations and evaluation reports

5. Findings

This research examines how local and national actors institutionalise CCDRR+C4A at different levels in the last 15 years, including their constraints and opportunities.

The findings are organised into six sub-sections. Section 5.1 highlights policy pertinent to CCDRR+CCA change at the national level in the last 12 years after Indonesia’s disaster risk management (DRM) policy reform in 2007 and the launch of Plan Indonesia’s child-centred pilot projects in Rembang and Sikka in 2008. Section 5.2 highlights the process of institutionalisation and its (dis)continuity in the piloted districts. Section 5.3 highlights the role of curriculum and teachers; Section 5.4 highlights findings concerning the discursive change (e.g. via disaster songs). Section 5.5 highlights nudges as a potential institutional approach; Section 5.6 discusses the role of institutions such as forums and joint secretariats. While our main questions focus on how child-centred DRR + CCA is institutionalised at different levels and/or what forms of institutionalisation occurred at different levels in the last 12 years, we found a plethora of complex routes to sustain CCDRR+C4A. However, the findings below suggest that one of the opportunities to institutionalise CCDRR+C4A can be achieved via local and national adoption of the Comprehensive School Safety Framework and other institutional pathways [1].

5.1. Progress of CCDRR - formal approaches

A community-driven approach to disaster risk reduction in Indonesia is not new. When we conducted our first fieldwork in 2008, NGOs had been piloting community-based DRR in several locations in Indonesia, including Central Java and East Nusa Tenggara [19]. But placing children at the centre of DRR-CCA planning and implementation was a new approach in 2008 [15]. It suffices to argue that the baseline policy related to CBDRR-CCA in 2008 was relatively new. However, Table 3

Table 3
Regulations related to child-focused DRR at the national level.

Regulation	Remarks/forms of institutions
Child Protection Law 2002 (UU 23/2002)	Part 5, Special Protection for children in emergencies (refugees, disasters, conflict)
National Education System Law (UU 20/2003)	Part 12, Special Education service for children in disaster/conflict-affected areas.
MoE Regulation on Education Facility and Infrastructure 24/2007	Facility and Infrastructure (for primary education, middle schools and senior high schools)
Disaster Management Law (UU 24/2007)	Participation of all parties; Protection from disaster is a human rights; All parties have a role to play in managing disaster risk
MoE Circulation Letter 2010 [70a/MPN/SE/2010]	Mainstreaming DRR in schools
Government Regulation 2010 [PP 17/2010]	Chapter VII regulates special education service delivery to students in times of emergency as well as incentives for teachers in isolated areas and social conflict, ‘natural’ disasters affected areas)
Head of BNPB Regulation 2012 [Perka BNPB 4/2012]*	Guidelines for Implementation of Safe Schools/Madrasah (SMAB)
MoE’s General Secretary Decision 2014 [SK Sekjen Kemendikbud 8953/A. A2.1/KP/2014]	National Secretariat of Safe Schools, namely SMAB
Disability Law [UU 8/2016]	Rights to protection from disaster (Chapter 6, v 16) and public service for protection from disasters (Verse 109)
MoE Regulation 2017* 110/P/2017	National Secretariat of Safe Education Unit (SPAB)

Source: [40]; [1].

SMAB is school/madrasah safety in formal schools; SPAB is equivalent to the Comprehensive School Safety framework beyond formal education.

* NGOs, including Plan Involved as key supporters/advocates.

suggested that the anchors for the Indonesian government’s child-related protection program can be traced back to the laws of Child Protection (Law 23/2002) and National Education Systems (Law 20/2003). Before the DRM policy reform materialised in 2007, the basis for CCDRR+C4A was partly regulated by Child Protection Law 2002 and National Education System Law 2003. Both recognised children’s specific needs and rights to protection in emergencies originating from natural hazards, conflict, and refugee/displacement settings.

Elsewhere in Indonesia, local disaster management agencies (BPBDs) were either ad-hoc in nature or non-existent before 2008. The CBDRR+CCA pilot projects from Plan Indonesia began at the beginning of Indonesia’s DRR/DRM policy reform. A new Disaster Management Law (UU 24/2007) was introduced, establishing the National Disaster Management Agency (BNPB) in Jakarta in 2008. Should they exist, the policies and organisations were mainly focused on reactive emergency responses. Even though Law 24/2007 posits that DRR/DRM is the responsibility of all, it can be interpreted that CCDRR+C4A is inclusive; however, the governmentality of DRR has been mainly top-down and adult-centric [15].

5.1.1. Twelve years after first national legislative reform on disaster risk management

Indonesia has been reforming its disaster risk management sector since 2007. As of 2019, all 34 provinces have established their BPBDs. At least 92% of the districts/cities (472 out of 514) have already established their BPBDs. Most of these BPBDs are based on local legislative processes. While most BPBDs have been in operation, their approach to children and school-based DRR remains unclear.

Indonesia’s Blueprint for Disaster Reduction 2045, which the National Planning Agency recently drafted, only mentioned children twice. First, in the context of citing international initiatives or agendas (child-friendly or safe school); And second, in the DRR strategy 2015–2045, which only states that the participation of all the vulnerable groups, including children, needs to be improved ([14], section 2 h). While great strides have been made, this suggests that CCDRR+C4A remains marginal from the mainstream DRR policy. Therefore, different institutional pathways should be sought to push CCDRR+C4A and comprehensive school safety to become a national framework. Such institutional pathways include embedding a comprehensive safe school framework into the Ministry of Education (MoEs) at the national and local DoEs.

5.1.2. CCDRR institutionalisation at national levels: legislative and regulatory change

The Ministry of Education (MoE) formally promoted *Mainstreaming DRR in Schools* via an internal circulation letter to the nationwide Department of Education (DoEs) for the first time in 2010 [Table 3]. BNPB partially adopted the Comprehensive School Safety Framework by developing a guideline on school safety focusing on structural and non-structural mitigation approaches [9]. For structural mitigation, the guidelines focused on schools’ location, the structural safety of school buildings, and the design of safe classrooms and safe school facilities. Non-structural approaches focused on forming knowledge, attitude and practice (KAP) of students/teachers, school policy, disaster preparedness, and resource mobilisation. However, we found that most of the approaches from the national ministries have been less child-centred as there is a lack of clarity on how the system ensures children’s participation in DRR-CCA. Most of the policies have been DRR policies that ensure children’s safety.

The National MoE recently endorsed the establishment of a national secretariat of safe schools in 2014. It was initially focused only on school safety. Through positive interactions between international players such as UNICEF and other child-focused NGOs, including Plan Indonesia and Save the Children, MoE later revised their policy by shifting from a focus on safe school/madrasah buildings (SMAB) paradigm to a Comprehensive Safe School paradigm (SPAB) as promoted by global actors [13]. The shifts in the name of the National Secretariat (PMAB to SPAB) reflect

this paradigm shift. Initially, SMAB aimed to materialise a mixture of Safe, Healthy, Green, Inclusive and Child Friendly (SHGICF) concepts and frameworks in schools and madrasahs (Islamic boarding schools). Unfortunately, SMAB focuses only on traditional schools/madrasahs and leaves non-formal education out of the agenda ([48], p. 4).

While as a program, SPAB is envisioned to reach many more educational units beyond formal schools. SPBA is based on three main principles: First, right-based approach Adoption in the Implementation of safe schools and/or madrasahs (Islamic schools) to meet children’s rights, including rights to education and safety. Second, the approach should be interdisciplinary and comprehensive in that safe schools must be integrated with minimum service standards for education and national standard for quality education. Third, adopting an intercultural approach principle ensures that a safe school prioritises interpersonal and intercultural communication based on national identity and humanitarian values [38].

5.1.3. National secretariat for safe education: incentives and path dependency variables

CCDRR+C4A has been recently promoted via the School Safety framework in Indonesia, as shown by the increasing importance of the SPAB Secretariat at the national level. MoE and the stakeholders, including UNICEF and NGOs, recently transformed the role of the national secretariat for safe education (SN-SPAB) to strategically provide support for local governments interested in forming the local administration of SPAB district and provincial levels. Therefore, financial resources are pooled at SN-SPAB and co-financed by the Ministry of Education and UNICEF.

UNICEF, through the NS-SPAB, provides funds and technical support for districts/cities and provinces that are showing interest. The supports include incentives or funds for workshops and meetings related to safe school issues. As of 2019, five provinces supported include Aceh, Bengkulu, South Sulawesi, Jogjakarta and Maluku.

Table 4 shows four (out of 34) provinces and seven districts/cities

Table 4
Early adopters of sub-national school safety policy.

No	Sub-national safe school policy adoption	Year	Area coverage
1	Sikka head of district decision letter 368/HK/2013 for safe school facility in the school system for primary and junior high school**	2013	District/ City
2	Sikka head of district decision letter 241/HK/2017 for integration of safe school into the 2013 curricula**	2013	District/ City
3	Rembang head of District Regulation 2014 on disaster risk reduction in school*	2014	District/ City
4	Jakarta Governor regulation on safe school no 187/2016, on safe school/madrasah**	2016	Province
5	Governor of East Nusa Tenggara province Decision Letter 303/KEP/HK/2017 for safe school secretariat**	2017	Province
6	Governor of East Nusa Tenggara province circulation Letter 2017 for safe school implementation**	2017	Province
7	Nagekeo Head of District decision letter 357/KEP/HK/2018 for safe school secretariat**	2018	District/ City
8	Lembata head of district regulation 213/2018 on safe school secretariat**	2018	District/ City
9	Pidie Jaya head of district 11/2017 on the implementation of safe school/madrasah ***	2017	District/ City
10	Governor of Bangka Belitung Province Decision Letter 188.44/225/DINDIK/2019 on Safe school secretariat***	2019	Province
11	Mayor’s Decision for Safe School Secretariat [KS Wali Kota Palu Nomor 420/795/DISDIK/2019]	2019	District/ City

Source: Authors’.

* Plan involved as one of the promoters/advocates together with other child-focused organisations.

** Plan as the supporter/promoter and/or advocate for the regulatory drafting together with the Department of Education.

*** Self-initiated by the local education department and support by MoEC.

(out of 514) that formally adopted safe school policies and programs. For local governments that can initiate their SPAB program and related activities, the SN-SPAB and NGOs such as Plan Indonesia can provide capacity building and peer support. While NGOs like Plan Indonesia and other child-focused NGOs could lead the local process via funding and facilitation by cooperating with the local department of education. For example, the places like Rembang and Sikka (including Nagekeo and Lembata) districts, where Plan Indonesia has piloted and continued to promote CCDRR+C4A and comprehensive school safety programs, tend to be the early adopters of safe school regulations. This suggests that future adopters of CCDRR+C4A and CSS framework are likely to be the ones that have been receiving NGOs’ support.

5.2. Progress of institutionalisation of CCDRR at sub-national levels

5.2.1. Rembang: the limit of discretionary power and incentives

When we interviewed the local government officials, including Local Development Planning (Bappeda), in 2008, almost all agencies had no apparent role in DRR/CCA, let alone the CBDRR-CCA [15]. Twelve years later, the Bappeda has included DRR in the present Mid-term development planning (MDTP) 2016–2021. The fiscal allocation has become regular for local government departments such as BPBD, Social Work department and Public Works and Spatial Development Plan Department (Suryandari 2019, FGD meeting – See Table 5, below).

The BPBD in Rembang has typical disaster preparedness, and awareness campaigns include installing disaster warning signs during the National Disaster Reduction Day (Markus 2019, personal communication – see Table 5). Unfortunately, BPBD’s program related to CCDRR+C4A remains limited to one-off emergency response drills in schools. Recently BPBD’s began to focus more on the resilience village program. However, its approach often involves the one-off delivery of projects with no clarity regarding the follow-up program for the schools. In general, school structures’ do not support BPBD’s approach in the long term because BPBD’s approach to community-based DRR-CCA remains organised in pilot projects based on village administration boundaries while schools are often inter-village entities. Twelve years after national DRM policy reform, only one Destana (disaster resilience village) initiated in Bendo Village in 2018 serves as a CBDRR model. This village was part of Plan Indonesia’s CBDRR village, which commenced village-level contingency planning in 2013. The first fiscal allocation for such a Destana in 2018 was about A\$10,000. If it were not a hit-and-run approach, it was one-off support.

Furthermore, the Rembang BPBD does not have a regular program on either CCDRR+C4A or DRR-related programs in schools. The BPBD initiated a ‘safe school’ project in some senior high schools in 2014. Unfortunately, Rembang legislators dropped BPBD’s proposal on the Safe School program from the fiscal plan in 2015. One of the problems of BPBD’s withdrawal from school-based DRR programming is the perception of the local stakeholders about collision of mandates between

Table 5
Resource persons in Rembang.

Resource person	Organisation	Venue and date
Nugroho, Tri Hutomo	Department of Education (DoE)	DoE Office, 22 April 2019
Markus	Rembang BPBD	BPBD Rembang Office, 23 April 2019
Rama, J.S.	Rembang DRR Forum	DoE Office, FGD meeting, 23 April 2019
Suryandari, S.	Bappeda (Rembang Development Planning Agency)	DoE Office, FGD meeting, 23 April 2019
Pardede, M	Kypa Foundation	Rembang, 22–25 April 2019
Nugroho, Tri Hutomo	Department of Education (DoE)	DoE Office, FGD meeting, 23 April 2019
Sulistiyowati	Dadapan Primary School	Dadapan Primary School, 24 April 2019

local government departments related to the schools and child-focused DRR. Local legislators maintained that there were (unnecessary) overlapping roles of the Education Department with BPBD and RAD in implementing a safe school plan. This suggests that CCDRR+C4A implementation has been based on educational development pathways instead of the other institutional alternatives.

Plan Indonesia's role in school safety with the CCDRR+C4A approach in Rembang has been a game-changer. The interviewed stakeholders at the Department of Education (DoE) of Rembang argued that "without the investment during 2008-2015, the status quo will remain" (Hutomo 2019, personal communication). Before 2008, there was barely a program that addressed the need for school-based DRR as an entry point to CCDRR+C4A in a broader sense. During the first phases of CCDRR+C4A, Plan Indonesia invested in 10 schools, where a local NGO was hired to deliver school services. School/community facilitators were appointed for each selected school, where each school received at least one field facilitator who coordinated and managed relevant activities with teachers and students. This approach was continuously implemented from 2008 to 2015. Using their discretionary power, officials from Rembang DoE have been implementing their Safe School program since 2015, when Plan Indonesia completed their CBDRR-CCA pilot project. To date, DoE has allocated a budget to replicate the safe school model from Plan (during the CCDRR projects) in at least 40 schools (on top of the existing ten schools from Plan) (Hutomo 2019, personal communication). This program has a dedicated budget for hiring a safe school consultant who happened to be the former school/community facilitator. DoE has also pushed the schools to establish disaster preparedness mechanisms at schools. Using their rights to propose a local bill, the DoE has drafted a local account for *Sekolah Ramah Anak* (safe school) that accommodates Safe, Healthy, Green, Inclusive, and Child Friendly (SHGICF) approaches. An expert consultant was hired to draft the bill, which is to be elevated and proposed at a higher level of policy-making at the local parliament this year. This suggests that discretionary power is seen as limited and that having a formal regulation is still necessary to sustain CBDRR and a safe school plan.

The DoE also trained teachers from every school on safe schools. The program encourages schools to develop the following activities or programs: formation of a disaster-ready team or school-based disaster preparedness team; conducting hazard, vulnerability and capacity analysis at the school level; developing school evacuation plans and maps; developing SoP for emergency management at school; and school-based disaster simulation. As of 2019, the DoE allocated (sometimes) more than US\$2500 a year to support the Safe Schools program.

Hutomo claimed that "We have the instrument of safe school policy. However, there is no way to enforce the adoption of the instrument. Monitoring is impossible to be done. The mistake is ours from the Education Department where we have no systematic way of getting monitoring data from school supervision/inspection." (Hutomo 2019, FGD meeting – see Table 5) Furthermore, the DoE has pushed to endorse a formal regulation, namely the Head of District Regulation on Inclusive Schools, where schools are forced to accept children with a disability. Unfortunately, schools lack resources/facilities that accommodate children with disabilities (Hutomo 2019, personal communication).

5.2.2. Sikka experience: formal institutionalisation

Like Rembang, Sikka was in a similar condition in 2008, where local institutions dealing with CCA and DRR were non-existent. However, five years after the CCDRR+C4A pilot project, Sikka became the first adopter of a formal school safety policy as indicated by two regulations. First, the Sikka head of district decision letter (No 368/HK/2013) for safe primary and junior high school facilities. Second, Sikka, head of district decision letter (No 241/HK/2017), was issued to push schools to integrate CSS agenda with the curricula. Therefore, Sikka has shown promising progress by scaling up its intervention by advocating DRR into a mandatory school subject, with the availability of learning materials, monitoring tools, and active collaboration with the school supervisors

[4]. It is a significant policy development where a local government formally adopted CCDRR+C4A and school safety agenda into its schools and curriculum levels. Unfortunately, we had no opportunity to investigate how fiscal allocation for both CCDRR+C4A and school safety on a regular basis.

5.3. Discretionary power of local champion

Curriculum that includes DRR + CCA can be interpreted as a legitimate form of institutionalised action. Most of the stakeholders who participated in our FGDs in Rembang and Jakarta have recognised the strength of this approach. The question is how to do it. In the last 12 years, only a few local governments have been trying to take this path. Sikka and Rembang were among the first districts in the country to formally integrate safe school approaches into the national curriculum. The positive use of discretionary power of local officials in both districts can impact everyday school routines. Nevertheless, it remains to be seen as we did not have the opportunity to explore this further.

However, we visited one of the schools participating in the CCDRR+C4A pilot project during 2008–2015. Dadapan Primary School was seen as an outlier by Plan and Rembang DoE's staff (Hutomo 2019, personal communication; Pardede 2019, personal communication). We found that the Primary School sustained its school-based DRR activities four years after the project ended because of the school principal's discretion, who inspired her school and herself to be a local champion whose mindset is to be the best as she wants her school to be the best in Rembang. With that in mind, she tends to adopt any form of innovation introduced to the schools. (Sulistyowati 2019, personal communication). Therefore, teachers and school leaders are key to implementing the Safe Schools program.

The Dadapan school principal can be seen as the champion of safe school agendas due to their leadership (Pardede 2019, personal communication). Such champions are the 'institutions' because they can create their own rules. Therefore, Local champion exercises both their discretionary as well as discursive power. Their discretionary power can determine school and societal resilience. Local champions can help reduce institutional uncertainty temporarily [18].

5.4. Rational choice or discursive intervention?

CCDRR+C4A has been relatively new to many (local and national) government officials despite being piloted in the last 12 years. Therefore, to promote CCDRR+C4A, a new discursive landscape of DRR + CCA is needed. This includes using multi-pronged approaches to promote DRR/CCA, including training and capacity development and discursive intervention.

The SPAB program has promoted both CCDRR+C4A and CSS via regular training events. We found that discursive change has been made through other means, including training and producing safe school-related books by SPAB, Plan Indonesia, UNICEF, and others. For example, the national SPAB secretariat has recently trained more than 90% of its 1500 targeted trainees from local governments in Indonesia (Pardede 2019, personal communication). From January to Mid-April 2019 alone, SPAB has trained about 290 trainees from national ministries, local government officials, and the local Indonesian Red Cross [41].

5.5. Unintentional nudges

Department of Education in Rembang has been experimenting with nudging the safe school concept into the school accreditation process at the local level. The main idea is to mainstream DRR by including school safety indicators in the School Accreditation process (Hutomo 2019, personal communication). Out of 119 indicators, there are some indicators on school safety (for primary school), such as the need for a school evacuation map ([24], p. 15). We found that the formal policy

approach above, as summarised in Table 2, might have impacts, but it is not straightforward at the school level. Interestingly, insights from our fieldwork in 2019 in Rembang suggested that national school accreditation (NSA) can be a vehicle for promoting CCDRR. The recent NSA document included at least eight variables of the school safety framework. If this has been practised, how far can this approach shape schools to adopt disaster preparedness measures at the school level? While this approach has been paternalistic or top-down, no identified coercive mechanism exists. We argued that the NSA serves as a mirror for schools to consider adopting the safety framework.

5.6. DRR forums as institutional network: lack of incentives to operate

Local DRR platforms or forums should be seen as a form of institutional mechanism as they can play various roles, such as awareness-raising and DRR policy advocacy [10,46]. With the support of Plan, Rembang and Sikka have established several DRR forums at different levels, including district, sub-district and village levels. The good news is that these village-level forums allow children to participate. At the village level, the first DRR forum was in Dowan, where Plan Indonesia had worked with the school and communities since 2007. However, the forums have weak legal status (as their organisations have been acknowledged informally by the local government). After the project ended, they had no regular activities due to no funding from any party. The district-level DRR Forum only meet once a year during a ceremony on Disaster Day. The DRR Forum at least exists in social media (WhatsApp group). In reality, deficits in incentives (funds) lead to deficits in activities.

During the CBDRR+CCA project timeframe in Rembang, there were active DRR forums at the *Kecamatan* level (sub-district), but they are not operational as of 2019. The forum chairperson noted that the Plan facilitated the establishment of 9 DRR Forums while the local governments added five forums (Rama 2019, Rembang FGD meeting). The problem with the continuity of DRR Forums is their lack of legal status (not registered as a legal entity – e.g. proven by a notarial deed). Weak legal status prevents local governments from supporting the forums using local government funds. While there are potential merits of DRR forums as they serve as an avenue for DRR agenda setting for broader agenda inclusion, such as disaster education and CCDRR+C4A, there is little to show how effective the forums are beyond the project timelines.

Recently, there have been efforts to establish new forums, namely the local joint secretariat for school safety (LS-SPAB), where local government, under the leadership of DoEs, work with relevant stakeholders to promote School Safety initiatives. However, this approach demands commitments from the local government to allocate funds and resources (e.g. office and facilities) to ensure the continuity of safe school activities. The first adopters of this approach include districts in disaster-prone provinces such as East Nusa Tenggara (Nagekeo and Lembata districts in 2018) and the City of Palu and Bangka Belitung Province in 2019 (Table 4).

6. Discussion: hybrid strategy in mainstream CCDRR+C4A

Mainstreaming or institutionalising CCDRR+C4A in a modern context requires various institutionalisation mechanisms. The existence of a local champion that serves as a messenger and a policy entrepreneur can foster the adoption of particular CCDRR+C4A agendas and lobby for resource allocation (human and financial/fiscal) for DRR/CCA issues. Still, without clear incentives and a conducive regulatory environment, long-term change might not occur.

Nevertheless, institutionalisation may also mean small changes, such as tweaking new job descriptions [5] of schools and heads of schools, introducing training and guidance for local officials and teachers, and developing monitoring and evaluation tools to promote CCDRR/C4A. Therefore, the institutionalisation of adaptation and resilience occurs partly due to empowered local actors' discretion and interests.

Table 1 suggests that there are options for local stakeholders to adopt as measures to ensure adaptation to climate risk and resilience as they see fit and necessary. This suggests that a mixture of formal and informal approaches is needed. Furthermore, a hybrid approach suggests that local reform occurs in the context of a complex interaction of local and international actors and state and non-state actors. This also indicates informalities characterise the reality in formal institutional settings. This can mean local champions adopt specific ideas or discourse that can be introduced informally. However, this policy change assumes that actors and new ideas must come first [18]. This is later followed by processes (formal and informal) that lead to a change in the formal development plans and fiscal allocation that occurs in both political and traditional administrative settings.

Despite different mechanisms and efforts made at national levels, we are puzzled by the fact policy adoptions, and institutionalisations of CBDRR+CCA and School Safety have some clear patterns. First, traditional local disaster regulation (formal/legal measure) is not a good predictor for adopting and institutionalising CBDRR+CCA and school safety frameworks. The fact above contradicts the global belief informed by HFA or Sendai Framework that local disaster management legislation often forms the basis for strong institutional formation for disaster risk reduction [45,46].

Second, the adoption of safe school policy occurs in areas or regions where there is the prior existence of CBDRR+CCA and safe school advocates such as INGOs. It can be interpreted that institutionalisation is likely to occur when NGOs pave the way towards a tipping point where local governments can accept and lead local school safety policy drafting and endorsement. But these non-governmental agencies must be able to access international funds and human resources.

Third, recent disaster experience serves as anchors; hence, they become better predictors for policy adoption by local policymakers to establish a local secretariat for school safety initiatives. This has been presented well by the data. Therefore, we argue that pathways dependency theory better explains how likely a local government will adopt the CCDRR+C4A and school safety framework.

Path dependency theory also serves as a good predictor as the sectoral approach remains the game in town. There is clear evidence at both the national level and local levels. At the national level, there is a tendency for institutional pathways for governing CCDRR+C4A tend to go through the Ministry of Education and education/child-focused organisations. While at the local level, the proliferation of local disaster management institutions (i.e. the formation of about 500 local BPBDs) does not necessarily lead to the mandate to mainstream CCDRR+C4A and school safety plans. What really happened is that locally empowered, and transformative DoE officials and the existence of child-focused NGOs are keys to ensuring CCDRR+C4A.

7. Final remarks

It is better to have something than nothing. In the context of CCDRR+C4A, we found that the national and local education ministries/departments are the ones that become 'natural institutions' that are seen as more legitimate to promote CCDRR+C4A as well as school safety agendas, as shown in Sections 5.1 and 5.2. Path dependency theory (Section 2.7) can be a predictor for the institutionalisation process of CCDRR+C4A because disaster management agencies at all levels tend to be ignorant of the child-centric approach to DRR + CCA. This view is particularly true because of the long-established tradition of the top-down approach in the emergency management sector. Furthermore, local legislators tend to share departmental thinking: that the mandates of education and children-related affairs must be in the hands of DoEs.

While the agenda of inclusive DRR governance where children can have a shared space remains in the hands of other stakeholders, such as DRR platforms, including NGOs. The challenge is that both platforms and local NGOs depend on incentives, while endogenous or exogenous incentives cannot always be sustained.

Flexible institutional pathways such as an admixture of nudging, local champions and incentives are necessary to complement other forms of institutionalisation. These include collaborative platforms often used as temporary options to kick-start a new innovative approach. For example, joint secretariat, sectoral forums and DRR forums are often seen as soft institutional frameworks that can be created to promote and stimulate national and sub-national governments to encourage the implementation of DRR/CCA and other development services. These forms of institutions are attractive because they provide avenues for collaborative governance where decision-making on risk reduction, including CCDRR+C4A, is shared by stakeholders [10]. However, their sustainability largely depends on incentives that form them in the first place. For example, urban resilience forums in Semarang City and Bandar Lampung formed by Asian Cities Climate Change Resilience Project were functional and alive during 2009–2016. Unfortunately, once incentives stop, their collective action and existence become compromised [18]. However, Joint-secretariat does not last forever, as suggested by the previous multi-stakeholder, including multi-local government forums [12]. This paper concludes that mainstreaming children's participation in DRR + CCA and school safety agenda depends on the type of institutional mechanism and institutionalisation processes. The progress of child-centred disaster reduction has been incremental and achieved mainly through more complex routes, including school safety and other school-based disaster risk reduction programming. The national-level approach to mainstream school-level adoption often combined legislative reform, incentives, nudging, coercive and discursive approaches. The paper concludes that *the hybrid approach to institutionalisation can explain* change and (dis)continuity of child-centred resilience disaster risk reduction and climate change adaptation.

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Authors' contributions

Four out of five authors (1st, 2nd, 4th and 5th) involved since the initial field study in 2008. Two authors (2nd and 3rd authors) have been engaged as former staff of Plan Indonesia until 2014 and project evaluators of some CCDRR+C4A-related projects in 2018.

First author role include: conceptualisation, methodology, data curation, formal analysis, conduct field work in 2008 and 2019, writing original draft, review and editing. The first FGDs with local governments and NGOs were held in Sikka and Rembang (October 2008). The final stage consists of a focus group discussion (FGD) with staff from child-focused NGOs and key government institutions - in Jakarta, Rembang, and Grobogan in a workshop (Table 2). The first author was involved in FGDs and participant observations in 2008 and 2019.

Second author role include: funding acquisition in 2019, Project administration from 2008-2014. Field investigation in 2008 and 2019, review and editing. In 2008, the authors (1st, 2nd, 4th, 5th) conducted personal interviews with the stakeholders from the Local Development Planning Agency (Bappeda), Social Departments, Local Indonesian Red Cross, and local NGOs in Rembang and Sikka. In 2019, personal interviews (by the authors the 1st and 2nd authors) were held with regional disaster management offices (BPBD), Bappeda, the Educational Department, and Former Plan Indonesia's implementing partners, teachers and heads of schools.

Third author role include: field investigation in 2018 and 2019; Project administration during 2009-2014.

Fourth author role include: conceptualisation, field investigation in 2008; contribution to analysis and original draft in 2008. ThBackspaceBackspaceF

Fifth author role include: conceptualisation, methodology, funding acquisition in 2008, review and editing

All authors read and approved the final manuscript.

Declaration of Competing Interest

The fieldwork in 2008 and 2019 were funded by Plan UK and Plan Indonesia. The second author worked for Plan UK and Plan Indonesia from 2007-to 2015. The third author worked as an NGO staff partner and an evaluator of Plan Indonesia from 2013-to 2018.

Data availability

The datasets generated and/or analysed during the current study are not publicly available due to restrictions from the contract but are available from the corresponding author on reasonable request.

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