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ARTICLE



Strengthening policy research and development through foreign aid: the case of reducing deforestation and forest degradation in Indonesia

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ABSTRACT

This paper discusses work carried out in Indonesia to strengthen research capacity and support policy development for the implementation of the United Nations Framework Convention on Climate Change's mechanism for Reducing Emissions from Deforestation and Forest Degradation (REDD+). It addresses the questions: in an apparently receptive policy environment, what are the challenges facing the adoption of recommendations generated by policy research funded by foreign-funded projects, and what are the implications for the evaluation of the research? The paper reflects on some of the key research findings, on the contributions that capacity building for research can make to policy development, and on some of the challenges faced by policy-focused research projects and their assessment. It shows that many factors can influence the adoption of policy recommendations generated by research, leading to significant challenges for the evaluation of policy research activities.

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Introduction

The debate about the need to develop a new international mechanism to reduce greenhouse gas emissions from deforestation in developing countries started in around 2005. By 2010 an agreement on Reducing Emissions from Deforestation and Forest Degradation (REDD+) was reached at the 2010 Cancun meeting of the United Nations Framework Convention on Climate Change (UNFCCC). REDD+ was fully integrated into the agreement on climate change reached at the UNFCCC Conference of the Parties (COP) in Paris in 2015.

Indonesia was one of the first countries to demonstrate significant interest in promoting the early implementation of REDD+. For instance, as part of its preparations to host the COP of the UNFCCC in 2007, it organised a task force on REDD+ to develop key ideas about possible approaches to implementing REDD+ in Indonesia, and the implications of this for the forestry sector.

Due to the government's interest in REDD+, the Forestry Research and Development Agency (FORDA) of the Ministry of Forestry asked the Australian Centre for International Agricultural Research (ACIAR) to support a policy-focused research project on REDD+ even before the 2007 UNFCCC meeting. The four-year project 'Improving governance, policy and institutional arrangements to reduce emissions from deforestation and degradation (REDD)', hereafter referred to as the 'first project', started in April 2008. The aim of the project was to support the development of policy and institutional arrangements at the provincial and district level to facilitate the implementation of REDD+ and the capture and equitable distribution of financial benefits from an international carbon market. The key objectives were to: i) identify the causes of deforestation in the districts that were selected as case studies in the provinces of Riau and Papua; ii) estimate the benefits and costs of deforestation and REDD+; iii) support an improvement in the governance of forests; and iv)

support the development of a decentralised governance system for REDD+.

As the first project neared its conclusion—after a one-year extension to complete its originally planned activities and some additional ones deemed significant by the project steering committee—the Government of Indonesia (GoI) sought the development of a new project on REDD+. This was because the first project had delivered on its research and training objectives, but the international and national frameworks for REDD+ were far from fully developed, and so further assistance was deemed necessary. A new project 'Enhancing smallholder benefits from Reduced Emissions from Deforestation and Forest Degradation in Indonesia', hereafter referred to as the 'second project', was approved. It commenced in April 2013, and it is due for completion in 2018. The aim of this second project is related to the aim of the first one, but has an increased focus on rural communities. The aim of this second project is to conduct research to support the development and monitoring of policy and institutional arrangements at the national, provincial and local levels, to facilitate the effective implementation of REDD+ and the equitable distribution of its benefits to communities. The specific objectives are to: i) support the development of institutional arrangements and fiscal mechanisms for REDD+, linking implementation at the national with local levels; ii) identify options to protect smallholder interests and encourage private sector involvement in benefit-sharing mechanisms; and iii) enhance the design and performance of REDD+ policies and activities.

The information provided above shows that these ACIAR projects were funded in the context of a receptive policy environment. The GoI had a clear interest in developing the institutional framework for the implementation of REDD+, and FORDA had asked ACIAR to support policy research on REDD+. However, the experience of the projects demonstrates that there are some challenges faced in the uptake of the research

findings. Therefore, this paper addresses the questions: in an apparently receptive policy environment, what are the challenges facing the adoption of recommendations generated by policy research funded by foreign-funded projects, and what are the implications for the evaluation of the research? These questions are addressed because there are many donor-funded projects that seek to influence policy development, and greater understanding of the challenges could contribute to improving the impact of these projects.

Recent work on best-practice design of policy research projects suggests that a theory of change should be developed in order for a project to have a clear strategy about how to bring about desired policy change (Pasanen & Shaxson 2016). There are two issues that need to be considered in relation to this approach. First, the outcomes of policy development are always uncertain because many factors influence the development and adoption process, including the interests, motivations and knowledge that policy actors and institutions bring to bear on that process (Dolowitz & Marsh 2012). Dolowitz and Marsh (2012) emphasise that this is an area that is significantly under-researched, even in developed countries that have traditionally been the focus of studies on policy transfer. Therefore, even the best theory of change and related research do not necessarily lead to the uptake of policy recommendations put forward by a research project.¹ Second, and particularly relevant to the projects considered in this paper, a research project does not necessarily advocate or seek to bring about a specific policy. Rather, research projects are often designed to propose possible alternative policy options, as done, for instance, in the case of research on the design of the Intergovernmental Fiscal Transfer system (discussed later in this paper). This point is particularly relevant if a project is implemented by (or in partnership with) a government research organisation (such as FORDA, the research partner in the projects discussed in this paper) that is supposed to provide impartial advice rather than play an advocacy role. These issues will be addressed in the analysis of the work carried out by the research projects funded by ACIAR.

This paper adopts a case-study approach (Yin 2013) by focusing on two projects funded by ACIAR. The projects were selected as case studies because the author of this paper is the Australian Team Leader of the projects, and ACIAR asked the author to reflect on the way research had informed the process of developing REDD+ in Indonesia.

The analysis is based on inductive reasoning, as it is common in case-study analysis. Relevant information on the case studies (approach to capacity building and research findings) is presented in the following two sections. The challenges faced by projects that seek to promote the adoption of policy recommendations generated by the case study are then presented. The analysis of the challenges is supported by the use of a framework for the analysis of policy impacts of research projects (Summer et al. 2011).

Approach of the projects to capacity building for research and policy development

The first project was designed as a relatively standard research project, in the sense that it had well-defined activities and outputs to be delivered. However, the project was not just about carrying out research. It also had a series of

training activities aimed at increasing the capacity of government staff to carry out research, as well as improve their understanding of the policy options developed by the project and by other academics in Indonesia who were working on similar topics.

Research training focused on supporting two Indonesian project team members (one of whom was on leave from FORDA) to undertake PhD studies at the Australian National University (Canberra, Australia) through research carried out on the project's topics. Research training was also supported by involving FORDA's junior staff in data collection for the project's activities, with one of those staff members then going on to complete a PhD at the Bogor Agricultural University (Bogor, Indonesia) on a topic that was closely related to the outputs of the first project.

The Indonesian members of the research team have been the key project figures channelling the research findings into policy development. The projects have produced and disseminated standard research outputs, such as research reports, a book, and refereed journal articles. Those outputs ensure that the findings of the projects are scientifically sound and trustworthy. However, to enhance the likelihood that policy makers had access to the findings of the projects, and understood them, dissemination also involved policy briefs and in-country workshops, where the findings were presented to, and discussed with, relevant stakeholders from government, business entities and non-government organisations (NGOs). Moreover, Indonesian project staff provided input into policy development through direct participation in government working committees relevant to the project and that were set up to draft policies, laws and regulations.

The first project was faced with rather slow progress in the international negotiations on REDD+, compared with the initial expectations of many stakeholders, including national governments, local governments and NGOs. This resulted in a slow pace of policy development at the national level in Indonesia. Given that the international agreement on REDD+ was in the formative phase, there was uncertainty within government about which aspects of a REDD+ policy framework would be required or desirable, and therefore which ones should be given research priority. The specific focus and relevance of the research activities carried out by the projects will be considered in the following section. But it is important to note at this point that the key project partner in Indonesia, FORDA, emphasised as reported in the project proposal that the second project 'should be based on an action-research approach. Action research aims to provide timely scientific inputs to policy making so the recommendations can be implemented, their impacts assessed and *the policies/activities revised if necessary*' (emphasis added). This paper will consider the application of this approach and its implications later in the paper when discussing the lessons learnt. In order to support the derivation of lessons about supporting policy development, the next section deals with research contributions of the two projects and their policy implications.

Outputs of the projects: key research contributions in an evolving policy environment

One of the earlier key aspects investigated by the first project was the opportunity costs of alternative land uses

¹This does not imply that a theory is not of value. Rather, it highlights the uncertainty around the factors that eventually lead to change.

accruing to different stakeholders (Irawan et al. 2013). The study focused on the opportunity costs faced by companies and the national, provincial and district governments, by carrying out an analysis of the opportunity costs of avoided deforestation of three major land-use activities: commercial logging, timber plantations and oil palm plantations. The opportunity cost of oil palm plantations on mineral soil preceded by logging of degraded forest was shown to be prohibitively high, meaning that it would be very expensive to compensate companies for not carrying out this land use in order to avoid emissions (break-even point around US\$24 per ton of CO₂-equivalent). However, it was also shown that avoiding deforestation on peat soils would have a lower break-even point, in the range of US\$2–3 per ton of CO₂-equivalent (due to the larger amounts of carbon per hectare in peat). Therefore, the study argued that the government should focus on the implementation of REDD+ in peat areas. It also stressed that Indonesia could benefit financially from avoiding deforestation, given that international carbon prices could be expected to be above the break-even prices above. The study also stressed that REDD+ measures that impose restrictions on the development of those land-use activities would lead to a substantial loss of public revenues at the various government levels: whilst land-use management in Indonesia is rather centralised, and the national government retains most of the revenues from land-use alternatives to REDD+, district governments also have a significant influence on land use decisions. Therefore, to influence their behaviour, REDD+ schemes would need to create a direct link between the distribution of public revenues and the decisions of district governments on land-use activities in their localities.

Land-use activities of smallholders are particularly important for district governments, and for climate change outcomes. Therefore, the first project went on to examine the costs faced by smallholders (Cacho et al. 2014) who, often informally, manage large areas of land at the forest frontier. They normally use fires to clear the land, releasing significant greenhouse gas emissions that are especially high in the case of peatlands which contain thick layers of carbon-rich matter (Murdiyarto et al. 2010). Peatland fires also generate significant air pollution, as discussed later. This study derived marginal abatement cost (MAC) curves using data from a farmer survey in Riau province (Sumatra island), where rates of peatland deforestation are high. The first finding of the analysis was that, as in the case of companies, peat soils would provide a better return on investment of REDD+ funds compared with mineral soils. For example, at a price of US\$3 per ton CO₂-equivalent, a total of 8.8 Mt CO₂-equivalent emissions could be avoided in peat soils in Riau province over 25 years, compared with 3.1 Mt avoided in mineral soils. However, it was also shown that farmers' stated willingness to accept payments not to clear forest to establish oil palm is significantly higher than the opportunity costs estimated with a MAC approach. The amounts requested by farmers per hectare of land are higher for mineral soils than for peat soils. A payment of US \$10 per ton CO₂-equivalent would satisfy 50% or less of the

farmers in the area. From that study, it was clear therefore that implementing REDD+ activities was likely to be significantly more costly than foreshadowed by studies that have focused on the assessment of opportunity costs without considering the level of compensation sought by farmers.

Due to the need to provide local governments with sufficient funding to offset the opportunity costs associated with the implementation of REDD+, the first project also addressed the design of fiscal instruments for the decentralised implementation of REDD+ (Irawan et al. 2014), further developed by Irawan and Tacconi (2016). Those studies noted that the key underlying feature of a global REDD+ scheme would be the transfer of financial resources to participating developing countries. Therefore, the studies simulate different approaches to the design of intergovernmental fiscal transfers (IFTs) as a means to channel REDD+ international payments to local governments. Two approaches were tested: the cost-reimbursement and the derivation approaches.² The studies demonstrated that both approaches could be implemented. If the cost-reimbursement approach is used, localities with more-degraded forests would receive a higher compensation per unit of carbon emission reduction compared with districts with primary forests. Avoiding further conversion of logged-over areas is associated with higher opportunity costs when compared with preventing the conversion of primary forests. This is because the alternative land-use activities in degraded areas are mainly timber and oil-palm plantations (which are not allowed in primary forest areas). In contrast, the derivation approach sets a fixed percentage and rate for distribution of REDD+ revenues and ignores the opportunity costs of REDD+ incurred by local governments.

The key findings of the studies, relevant to Indonesia and more generically for other developing countries, are as follows. Using the cost-reimbursement approach, the IFTs distributed to local governments for pursuing REDD+ are determined entirely on the basis of the opportunity costs, which vary depending on land-use alternatives and the condition of the forests within a locality. Therefore, there would be an equity issue associated with this approach, as districts that contained degraded forest would receive higher revenues than those that have not pursued deforestation and forest degradation. Using the cost-reimbursement approach would also require an estimation of the costs of REDD+ for all localities, which may involve high transaction costs. In contrast, the distribution of REDD+ revenues amongst eligible district governments using the derivation approach ignores the opportunity costs to local governments from alternative land uses and focuses only on the market price of carbon credits and the share of revenues allocated to local levels. Localities with opportunity costs higher than the price of carbon credits should be allowed to refuse participation in REDD+, while localities with low opportunity costs would be allowed to keep the benefits from reducing deforestation and forest degradation that exceed their costs. Voluntary participation of local governments is therefore a prerequisite for this approach to succeed. Furthermore, using the derivation approach does not require an estimation of REDD+

²The cost-reimbursement approach decides the size of a grant pool based on a proportion of specific local expenditures to be reimbursed by the central government. Central governments usually define a service for which they guarantee to cover the costs incurred by local governments in delivering the service. The derivation approach determines the size of transfers to local governments based on a share of a national tax, and each local government receives an amount based on the total tax collected within their geographic boundaries.

costs for all districts, which would reduce the transaction costs involved in the implementation of REDD+.

Given that smallholders would face significant costs from the implementation of REDD+, the first project examined whether and how payments for environmental services (PES) schemes could be used in the institutional and regulatory context of Indonesia. PES was considered because it is a mechanism that can be used to pay land managers to change their activities to maintain or enhance the environmental services desired by the implementer of the scheme. Therefore, PES could be used to channel eventual REDD+ funds to rural people to implement programs seeking to reduce deforestation and forest degradation. The study by Muttaqin (2012) showed that securing property rights over forest resources was the most influential factor determining the success of PES schemes, including significantly reducing emissions from deforestation and forest degradation. However, land and forest policies in Indonesia had not clarified customary rights over forest resources.³ The study showed that national regulations often conflicted with local realities, such as where customary rights in Papua were not properly recognised in the national legislation but were operating at the local level. Customary communities living within and surrounding state forests in Papua claimed that they had full property rights over forest resources, but still felt that they had limited access to the forest. Moreover, the policy that recognises companies as preferred agents to manage forest resources often triggers conflicts between the companies and local communities. This situation was found in Riau province, Sumatra island, where local communities did not have access to state forests but demanded proper access to forest resources. That has been a persistent problem in state forest management and has often lead to forest degradation and deforestation. To improve the control of local communities over forest resources, establishing community-based forest management (by improving and implementing current regulations) was found to be essential. The regulatory analysis carried out by the study showed that there were already policies and regulations that could be used to make the tenure arrangements clearer. Communities could be involved in forest management through customary forests, community forests, village forests and community plantation forests.

The main step in the development of community-based forest management is delineating forest boundaries, since it would ensure that the development of institutional arrangements takes place in the right order (Muttaqin 2012). The implementation of community-based forest management could be the basis for designing PES at the local level. Such implementation would have a positive impact on tenure security and would reduce the technical constraints for implementing PES. However, it would increase the upfront investment costs of PES. On the other hand, the need for long-term support for capacity building in community-based forest management could be supported by the long-term nature of carbon payments.

The study also noted that an assessment of the existing tenure arrangements, and an examination of community perceptions and knowledge of PES, should be conducted as the initial stage of designing PES for REDD+ (Muttaqin 2012). Those activities are important in helping to assess the

interest of communities in participating in PES. Then, the first step in designing community-based PES for REDD+ would be the recognition of forest tenure through the development of community-based forest management. The second step would involve designing payment mechanisms which could require establishing new, or modifying existing, local institutions. Once their rights over forest resources were acknowledged, the communities could negotiate their involvement in REDD+. Despite some opportunities arising from the fact that the regulatory framework already allowed the establishment of community-based forest management, the opportunities for implementation of the recommendations at the time of the research appeared somewhat challenging. There appeared to be limited bureaucratic interest in the actual implementation of community-based forest management. The understanding of the role of PES was also still limited despite the work carried out through the project.

Whilst the first project was being implemented, there were policy developments related to the IFTs and PES ideas discussed above. In relation to IFTs, the author provided a briefing paper to the team that was working on the preparation of the 2009 green paper of the Ministry of Finance. The briefing paper recommended that consideration should be given to IFTs to address carbon emissions from land-use change. The green paper (Ministry of Finance 2009, p. 2) included a recommendation to 'support and incentivise carbon abatement measures by regional governments through the intergovernmental fiscal transfer system, working toward the creation of a Regional Incentive Mechanism (RIM) for climate change'. In relation to PES, independently from the first project the Ministry of Environment was preparing a regulation to formally recognise economic incentive mechanisms, such as PES, as policy tools that could be used by government to achieve desired environmental outcomes.

Following on from the work carried out by the first project, and on the seemingly positive indications coming from the policy arena, the second project was designed to further assess, among other objectives, the development of PES schemes and their possible integration with an IFTs system. As noted above, PES schemes would aim to provide payments to smallholders affected by the implementation of REDD+. Their integration with a IFTs system could result in a seamless transfer of funding from the central government, to local governments and on to smallholders.

During the implementation of the second project, several separate but related issues have arisen. First, the development of the IFT system has been progressing slowly within the Ministry of Finance. The reasons for the slow progress require further analysis, but a possible reason is that the Gol is still in the process of developing the overall institutional design for the implementation of REDD+, and funding mechanisms still need to be agreed upon.

Second, the draft regulation on economic incentive mechanisms that had been prepared by the Ministry of the Environment has experienced what appears to be slow but steady progress. The presidential administration elected in 2014 merged the Ministry of the Environment with the Ministry of Forestry in 2015 to create the Ministry of Environment and Forestry. The project's inquiries about

³Customary rights were considered because there are many areas in Indonesia where communities claim those rights over state forests.

progress in the development of the draft regulation point to two possible factors explaining the relatively slow progress. During the initial phase of the merger of the two ministries, the section of the former Ministry of the Environment that had been in charge of developing the regulation had not been perfectly mirrored into the new ministry, and there was no section of the new ministry that had a clear mandate to progress the work on the regulation. Then, once the competencies of the various directorates with the ministry had been revised, the negotiations on the design of a regulation that would establish the applicability of so-called economic instruments resumed. This regulation is supposed to include not just the establishment of a mechanism such as PES, but also other instruments related to pollution abatement and climate change finance.⁴

Third, the PES research component of the second project had been designed to work alongside the Kalimantan Forest Carbon Project (KFCP) funded by the then Australian Agency for International Development (AusAID). The KFCP focused on reducing carbon emissions by testing methods to rehabilitate degraded peatlands, which are the greatest source of carbon emissions from the forestry sector in Indonesia. The KFCP also had a component on rural livelihoods, aimed at supporting rural people that would have been affected by peatland rehabilitation (as rehabilitation and protection of the peatlands could have limited their ability to use such areas for livelihood activities). The rural livelihood component planned to test the design of a PES scheme to support livelihoods. The second project would have worked on the PES scheme as a case study to consider its impacts, and would have provided research input into the design and monitoring of the scheme itself. However, as the second project was getting underway, AusAID closed down the Indonesia-Australia Forest Carbon Partnership, which included the KFCP (Davies 2015). The second project was therefore left without its key PES case study.

In order to adapt the research program to the unexpected change, the second project carried out an analysis of existing PES schemes in Indonesia to establish whether one or more new PES case studies could be selected among those projects in order to replace the defunct AusAID case study (Suich et al. *in press*). The study identified eight schemes, three focused on water environmental services and five involving carbon, although one of the latter ceased to operate after fieldwork for the research had been carried out. The study did not identify projects suitable for the assessment of the impacts of PES on livelihoods (which was the original aim of the research). It did, however, derive some relevant findings. It assessed the perceptions of stakeholders, including donors, government and NGOs, about the factors that appeared to affect the development of PES in Indonesia. The main factors supporting PES were found to be the long-term support of individuals and institutions that helped to facilitate the establishment of schemes, building on the relationships between communities and facilitating agencies, and the presence of easily identifiable ecosystem services and their users. Stakeholders identified the lack of regulation of PES as a significant constraining factor, further compounded by overlap and uncertainties about existing environmental regulations. Other constraining factors identified include the lack of recognition of environmental

problems amongst potential environmental services buyers, and uncertainty in regard to rights to resources and land tenure for local communities.

As the third year of implementation of the project was progressing in 2015, a major El Niño event contributed to extensive forest and peatland fires in several Indonesian provinces. The fires generated haze pollution that affected Indonesia itself, as well as Singapore, Malaysia and even the Philippines. That fire event had significant negative health and environmental impacts, including emissions of greenhouse gases. Therefore, although research on fire management issues was not in the plan of the second project, the project did address some key policy issues relevant to climate change and REDD+ (Tacconi 2016). Tacconi (2016) stresses that Indonesian peatlands need to be protected and restored to prevent fires and their health, environmental and economic impacts in the wider region. That study also stressed that, in its Intended Nationally Determined Contribution statement, submitted before the UNFCCC COP in Paris, Indonesia has pledged an unconditional reduction in emissions of 29% compared with a business-as-usual scenario for 2030. An additional 12% would be cut with international support, such as initiatives focused on REDD+. As the 2015 fires released the equivalent of about two years of unconditional reductions, Indonesia is unlikely to deliver on its climate change pledge without making very significant progress on preventing fires.

Challenges for the adoption and evaluation of policy research findings in Indonesia

There are many potential factors that may influence the impact of research on policy (Dolowitz and Marsh 2012). Summer et al. (2011) summarised several key factors they considered important in a table that is reproduced in the left-hand columns of Table 1. The design elements of the two case-study projects considered here and the activities undertaken in these projects to enhance the likelihood of policy adoption are noted in the right-hand column of Table 1. The design features of the projects, and the activities carried out, address the factors noted by Summer et al. (2011). On that basis, the projects could be expected to impact on policy. However, a reflection on the experience of the projects indicates that further factors may influence the adoption of policy recommendations, with implications for the evaluation of policy-oriented research.

At a general level, the projects were designed to support the Gol's stated interest to implement REDD+. Like any other new policy activity, the eventual implementation of REDD+ has potential benefits and costs, some of which have been addressed by the projects (see above). The research results were regularly presented to the relevant representatives of government agencies, businesses, NGOs and local communities. But the adoption of specific options for the implementation of REDD+ has to be decided by the government in consultation with the relevant stakeholders. The decisions taken by the government on whether and how to implement REDD+ policies and activities can be expected to reflect various perspectives and interests. On this basis, it would appear that policy research projects such as those discussed here should be assessed on the basis of the quality

⁴Information derived from a discussion with a senior official in the Ministry of Environment and Forestry (3 October 2016).

Table 1. Factors shaping research impact on policy according to Summer et al. (2011) and case-study project approaches

What determines policy outcomes?	Factors shaping research impacts on policy, according to Summer et al. (2011)	Examples of ways to deal with factors shaping research impacts on policy according Summer et al. (2011)	Approach adopted by case-study projects to deal with factors identified by Summer et al. (2011)
Policy ideas, narratives & discourse(s)	Extent to which there is a consensus on the nature of the problem and appropriate responses	Packaging of research or 'knowledge translation' for policy audience, e.g. explicit and clear policy recommendations; short summaries or briefs; using policy 'language' such as economic vocabulary, framing of research to resonate with prevailing policy discourses, or tailoring messages to specific policy environments	Policy implications and, when appropriate, recommendations were stressed in project publications Policy briefs were prepared by staff of the main Indonesian research partner (FORDA) Economic/financial analysis is central to the research undertaken
	Extent of influence of international discourses on domestic policy	Research methodologies that develop research user 'ownership' throughout the research process	The projects have been carried out in close partnership the ministry's research agency (FORDA), thus maximising ownership by FORDA
	Extent to which policy issue is novel	Explicit, targeted communication and dissemination strategies	Apart from policy briefs, workshops to discuss research findings were organised by the projects, and involved government staff, representatives of relevant donors' projects and NGOs, and other researchers
Policy actors & networks	Extent to which ruling party is ideologically driven	Interpersonal relationships and networks: building or connecting to policy networks; policy 'champions' and intermediaries, and consultations with key policy actors on research during project	The research projects were designed jointly with FORDA. Its researchers are the key project links into the Ministry.
	Extent of 'special interests' or range of actors, such as service users, the private sector, unions, or professional associations; or strength of civil society, or influence of donors in policy arena	Credibility or 'brand' of the originating institution, funder or researcher(s)	FORDA is the research agency of the Ministry ANU is very well-known for its research in Indonesia The funding organisation has a long-term relationship with the Government of Indonesia The researchers involved in the projects have long-term experience in Indonesia
	Level of bureaucracy, professionalism and capacity to process evidence	Extent of 'border-crossing' between research and policy communities	Researchers from FORDA who work on the research projects were often involved to participate in policy working groups in the ministry
	Importance placed on systematic and other evidence reviews by policy makers in power	Using knowledge brokers to specifically get research to policy makers	Researchers from FORDA acted as knowledge brokers by participating in policy working groups and briefing policy makers when required
Context & institutions	Extent of democratic openness; degree of academic and media freedom; norms on consultation and participation in policy processes	Planning research to align to specific timing of expected 'policy windows', research aimed at important meetings of officials/politicians	The projects were designed and funded following requests from the Government of Indonesia. This would appear to indicate that the 'policy windows' may have been relatively open.
	Use of multi-year development plans and other planning instruments	Planning research to align to ready existing or created 'policy spaces' – electoral spaces; consultative spaces; popular protest spaces, etc.	The research was aligned to policy space as result of it being designed following a request from the Government of Indonesia
	Level of centralisation of political decision-making	Framing of research around unexpected events, e.g. the financial crisis; need for public expenditure efficiency	The projects were framed around a well expected event, the implementation of REDD+ by the Government of Indonesia
	Established institutional structures and policy advisory bodies which exist to link researchers and policy makers	Working creatively with these structures throughout the research cycle	Projects were designed to be implemented in partnership with the research organisation of the ministry

and relevance of the research and policy options presented, rather than on the basis of whether they manage to achieve implementation of a specific recommendation or policy.

In relation to the more specific working of the policy learning and transfer process, the framework presented by Summer et al. (2011) may need to be expanded to include organisational structures and processes within the public administration. First, in the specific Indonesian context research was carried out in partnership with the research arm of the ministry that does not have direct policy-making authority. The extent to which a research agency has influence over the parts of the ministry that have policy-making authority is therefore relevant to the eventual adoption of research recommendations. This issue may itself need to be investigated in order to better design research-strengthening activities and enhance the impact of research. Second,

the channels for the diffusion of information within and between government agencies need to be considered. With a specific example from the second research project, a workshop to present research on key issues in the implementation of jurisdictional approaches to REDD+ was quite successful as it attracted 40 participants from a range of government and non-government organisations. Despite the number of participants, a key issue is that it is difficult to attract senior government officials from the divisions of relevant ministries that have policy-making authority to that type of event, and so it is uncertain what policy impacts those workshops have. This obviously also relates to how information is sought and gathered by policy actors, including those outside government. This also relates to how policy learning across countries and experts is perceived by the decision makers: are foreign researchers seen as making

a positive contribution, or as being a negative external influence? These aspects are complex and have not been addressed by the two projects discussed in this paper. It would seem, however, that they are relevant to ACIAR projects and the policy research of other donors, as well policy-oriented development projects in Indonesia and beyond.

International factors are also relevant to the adoption of policy and hence the adoption of policy recommendations from research. The implementation of REDD+ depends largely on the willingness of developed countries to provide funding for performance-based emission reductions, which is at the core of the concept of REDD+. As already noted, Indonesia has indicated in its Nationally Determined Contributions (NDCs) submitted to the UNFCCC that it intends to use REDD+ to achieve a reduction of 12% of greenhouse gas emissions on the business-as-usual scenario by 2030 if there are international contributions. If these contributions do not eventuate, REDD+ will not be implemented. But this does not mean that the research projects discussed here have failed. They have provided information, for example on the costs and benefits of deforestation and forest conservation, contributing to the formation of the views of policy actors, and should these actors eventually decide that the best course of action for the public good is not to implement REDD+ the research has served that public good. It should also be noted that the analysis of options to reduce deforestation and forest degradation is also relevant to implementation of the NDCs.

The case of the NDCs highlights that policy research may have flow-on effects that take place over a relatively long period of time. The NDCs pledge states that a reduction in deforestation, forest degradation and fires (including those on peatlands) will account for a significant share of the unconditional 29% reduction in emissions on the business-as-usual scenario by 2030. Some of the research presented above is also relevant to this policy goal, as many instruments used to reduce deforestation could be used in the context of REDD+ and the NDCs, with attribution to the former or the latter depending on whether funding for the policy initiative originates within the country or abroad. Therefore, whilst the research projects considered here were designed to support the declared government intention to implement REDD+, they are also providing evidence that is relevant to the more recent policy objective. The usefulness of the research, or otherwise, would therefore need to be considered within this broader context.

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