PURPOSIVE MUDDLING

What Makes a Successful Local Problem-Solver? I4ID's approach to supporting successful experimentation by its partners in Tanzania

July 2021

PURPOSIVE MUDDLING
What Makes a Successful Local Problem-Solver? I4ID's approach to supporting successful experimentation by its partners

KEY LEARNING

- A successfully experimenting organisation demonstrates deep knowledge of its own abilities and its operating context, plus willingness and capacity to experiment.

- In order for experimentation to be allowed and rewarded, the context must provide both permission for variation and pressure for selecting successful innovations.

- To foster experimentation, donors and implementing partners can seek partners with these characteristics, keeping the authorising context in mind, and staying flexible throughout the process in terms of what qualifies as successful innovation.

1. INTRODUCTION

Institutions for Inclusive Development (I4ID) was an £11.6 million adaptive governance programme funded by the UK Foreign, Commonwealth and Development Office (FCDO) and IrishAid until 2020. The programme aimed to 'work with government, representative institutions, civil society and the private sector to strengthen institutions in Tanzania to become more inclusive and accountable so that economic growth and services bring more benefits to women, youth, and poor and vulnerable people.' It was designed as an adaptive facility to show how complex development problems can be resolved by testing and iterating scalable solutions with diverse stakeholders to broker collective action and systems change. I4ID took an issue-based approach, covering a set of workstreams in diverse areas such as water access, urban spatial planning, inclusive education and menstrual health management. The programme was implemented by a consortium, led by Palladium, that included SNV Netherlands Development Organisation (SNV), Overseas Development Institute (ODI) and BBC Media Action.

Much has been made of the importance of adaptive action by development organisations, but scant attention has been paid to the adaptive, innovative capacities of their partners. I4ID was an adaptive programme that sought to either discover or inspire a similarly experimental, adaptive approach in its partners, including Tanzanian businesses, CSOs and government agencies. In so doing, the programme argued that 'contributing to "pockets of effectiveness" within particular sectors or development problems is the most effective way to test and scale locally-led, problem driven, adaptive programming governance.'[1]

So, what defines a 'pocket of effectiveness', or, in other words, **what features indicate a successful problem-solver? In I4ID's case, what separated the programme's successfully adaptive partners from less adaptive ones? And under what contextual circumstances did I4ID succeed in inspiring a process of successful localised problem-solving?**
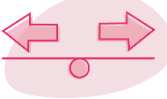
---

[1] I4ID Project Completion Report, 2020

This Learning Brief attempts to address these questions.

I4ID's three types of partners – commercial enterprises, government agencies and CSOs – differ significantly from one another. However, relevant literature indicates, and I4ID programme examples demonstrate, that successful innovators across these categories all have three things in common:

Managing well: They are focused on specific problems that they can clearly describe. They demonstrate an intimate knowledge of their organisation's existing capacity, sufficient to be able to reorient the organisation to take advantage of new opportunities. Also, they are willing to experiment.

Observing keenly: Successful problem-solvers, especially those in government settings, have strong situational awareness and contextual understanding. They can sense new opportunities and threats – the impetus for reorienting existing capacity – and they can navigate their environment to arrive at a positive outcome.

Mediating between their organisation and the context: They have willingness and ability to constantly compare what is 'known' versus what the context is saying, testing and experimenting to turn 'the iterative feedback of lessons into new solutions'.[2]

"Experimentation and muddling through may not produce useful solutions or indeed any solution. Bottom-up participation may degenerate into shouting matches and gridlock, as is sometimes seen in democratic settings. And if promoting innovation were easy, then we would all have done it long ago, and all our problems would have been magically solved. Obviously, it is easier said than done to adapt and to adapt effectively."

Ang, Yuen Y. How China Escaped the Poverty Trap, 2019

However, the characteristics of individuals and organisations are not, in themselves, sufficient to explain successful problem-solving. As the previous quote indicates, if it were up to individuals, anyone with the inclination could be a successful problem-solver.

The context – the operating environment in which the problem-solver labours to reach a solution – also matters. In this vein, relevant literature and I4ID cases indicate that a context that is conducive to successful problem-solving first provides an authorising environment for experimentation, then establishes rewards for the best innovators. In other words, that context speaks to two critical factors:

Space for variation – the space within which experiment is allowed, or the degree to which the operating environment gives permission for experimentation. In this sense, commercial enterprises, government agencies and CSOs, while inhabiting the same space, work under vastly different degrees of freedom to experiment.

Pressure for selection – the response to variation, or the degree to which institutional, financial and socio-cultural factors align to reward, punish or ignore innovators who experiment to identify solutions to difficult problems.

In sum, an experimental organisation demonstrates deep knowledge of its own abilities and its operating contexts, plus willingness and capacity to experiment. Meanwhile, in order for experimentation to be allowed and rewarded, **the context must provide permission for variation and a means of rewarding successful innovations**.

---

[2] Andrews, et al. Escaping Capability Traps through Problem-Driven Iterative Adaption, 2012
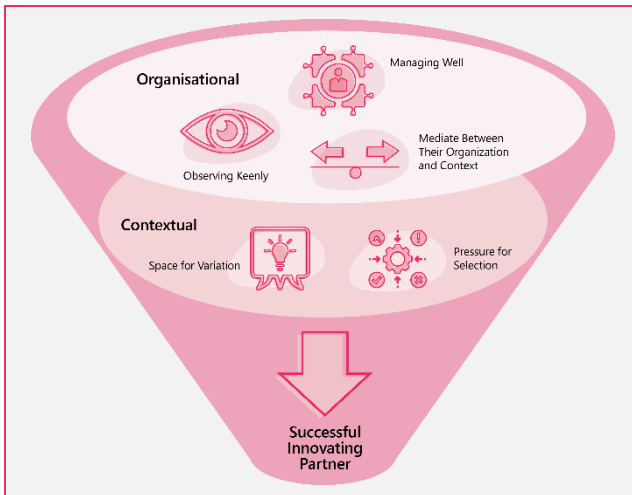
The remainder of this Brief provides an overview of some of the broader thinking that supports this analysis, then details two cases of I4ID workstreams – in Inclusive Education and Solid Waste Management – that illustrate the organisational and contextual factors at work. The document closes with tips for identifying actor characteristics and contextual factors linked with successful localised problem-solving.

2. SYSTEMS PERSPECTIVE: CHARACTERISTICS AND CONDITIONS THAT ENABLE SUCCESSFUL EXPERIMENTATION

This section builds a lens for analysing I4ID partners' capacities and freedom to experiment.

Characteristics of Successful Innovators

At first glance, the stark differences between the three types of actors – commercial enterprises, government agencies and civil society organisations – would make it difficult to see any commonality between the factors that make them more or less adaptive. The commercial enterprise presumably has the easier task, being able (within legal boundaries) to adapt a business model with only the restrictions it might impose upon itself. A government agency would be at the opposite end of that scale, bound within layers of procedures and by-laws to operate according to an established set of processes. Civil society actors could lie somewhere in between them.

However, a handful of features are common to all three. Eoyang (using the term 'muddler' to refer to

successful experimenters) argues that, regardless of the type of actor, 'a good muddler understands the context, understands the capacity of the system to respond, and makes decisions that mediate between the two.'[3] When she refers to mediating between the context and capacity, she means the innovator's interest and ability to experiment with the capacity in response to the context. This is a vital aspect of successful adaption. This description works across scales – individuals, businesses, governments – and only the specific context and capacities are different for each of these actors. 'But capacity and interest to moderate between the inside and the outside [of the organisation] is the successful experimenter's difference', she argues.[4]

Andrews et al. (2012) also examine the dividing line between an organisation and its context, arguing that smart state-building reform efforts should promote 'active, ongoing and experiential learning and the iterative feedback of lessons into new solutions'. This is about being sensitive to the environment and then having the understanding of the organisation to be able to react to the environment in a smart way.

More broadly, a **successful experimenter demonstrates mastery of two domains**:

- the important features of the operating context around her organisation, and
- the capacities of the organisation she manages.

Importantly, **she also tinkers with the latter as she observes the former**, adapting her organisation where possible to solve the problems upon which she is focused.

Characteristics of Contexts Conducive to Successful Innovation

But what aspects of the operating environment itself influence the degree to which experimentation will be successful?

Yuen Yuen Ang argues that, in China's case, it 'escaped the poverty trap by constructing a set of underlying conditions that fostered an adaptive, bottom-up search *within* the state for localised solutions... Central reformers direct; local state agents

---

[3] Interview with Glenda Eoyang, March 28, 2021

[4] Ibid

improvise.'[5] In so doing, she writes, Chinese leaders tackled two key challenges of adaptation:

- **Variation:** They authorised, and at the same time delimited the boundaries of, localised problem-solving, sending a clear message to innovators that experimentation was safe within those boundaries.

- **Selection:** They clearly defined and rewarded bureaucratic success that resulted in the local achievement of centrally set goals. In other words, they provided a mechanism for rewarding successful innovation.

Moreover, she writes, Chinese reformers accomplished this in a way that was practically possible within prevalent norms and other institutional constraints. They did not have to change culture to successfully promote experimentation.

In the end, Ang argues for 'crafting environments that facilitate improvisation among relevant players'. She says that, 'instead of aspiring to copy the exact actions taken by others', development actors should look for or seek to put in place '**conditions that spur a productive and sustained search for solutions that fit different and evolving environments**.'

The work by Andrews et al. (2012) describing Problem Driven Iterative Adaptation (PDIA) also emphasises the importance of 'an "authorizing environment" for decision-making that allows experimentation and "positive deviation."' They write that, to avoid the mistake of applying inappropriate, established solutions in new contexts, 'reform activities should aim to solve particular problems in local contexts via:

- the creation of an "authorizing environment" for decision-making that allows experimentation and "positive deviation", which gives rise to...

- active, ongoing and experiential learning and the iterative feedback of lessons into new solutions, doing so by...

- engaging broad sets of agents to ensure that reforms are viable, legitimate and relevant – i.e.,

politically supportable and practically implementable.'

Further supporting the importance of an authorising environment for experimentation, McDonnell, in her vibrant exploration of how 'pockets of effectiveness' developed within the Ghanaian civil service, argues that some mechanism for 'shelter from neopatrimonialism' is one of the key factors permitting the agents of state bureaucracies to do their work differently.[6] By 'neopatrimonialism', McDonnell refers to 'patrimonial practices and orientation' that incentivise obedience to the dictates and preferences of individuals in positions of power. Shelter from neopatrimonialism, especially when the shelter explicitly comes from elites (which is relevant in the Tanzanian context), provides innovators with the freedom to depart from established practice and experiment to reach locally appropriate solutions to difficult problems.

In summary, successful experimentation can be considered to be the result of three organisational and two contextual factors. A successfully experimenting organisation demonstrates deep knowledge of its own abilities and its operating context, plus willingness and capacity to experiment. Meanwhile, in order for experimentation to be allowed and rewarded, the context must provide both permission for variation and pressure for selecting successful innovations.

3. APPLYING THE LENS TO I4ID WORKSTREAMS: WHAT WORKED AND WHY

Example 1: Inclusive Education

In light of the literature review above, I4ID's work promoting Inclusive Education highlights some of the organisational and contextual factors that influenced the government's ability to successful problem-solve in response to a highly publicised incident related to education for deaf students.

Scenario:

Education for deaf Tanzanian children, while better than in some countries, nonetheless struggles to

---

[5] Ang, Yuen Y. How China Escaped the Poverty Trap, 2019

[6] McDonnel, Erin M., Patchwork Leviathan: Pockets of bureaucratic effectiveness in developing states, 2020

provide students with the same resources and attention afforded to Tanzanian children who are not hearing impaired. Only about 45 percent of the approximately 500,000 deaf Tanzanians are literate, against the general population's literacy rate of approximately 78 percent.[7]

In February 2018, a secondary school for deaf children in Njombe saw all 21 of its senior students fail their national exams, sparking a public uproar that pressured the Ministry of Education to come up with a plan to rectify the situation. I4ID offered to help analyse the problem, working quickly with a Tanzanian sign language expert to conduct research across five schools to understand the underlying factors that contributed to the Njombe failure. The study found that a lack of a uniform Tanzanian sign language was one of the factors undermining education for deaf children, in addition to unfair examination methods, insufficient quality assurance systems, a lack of in-classroom support for deaf students and stigma toward students with disabilities.

The Ministry of Education was able to quickly use that information to put forward a Tanzanian Sign Language for formal adoption, which eventually occurred in August 2020. In the interim, I4ID worked closely with relevant officials to upgrade the curriculum used to teach and assess deaf students. This was partly based on an experiment to test how deaf students performed with and without examiners who understood sign language syntax and structure. That experiment showed that the country's uniform testing system failed to account for deaf students' unique needs.

Shortly after the close of I4ID, the I4ID staff member responsible for leading this work was asked to join a task force established to review the whole national strategy for inclusive education.

*Organisational Factors Influencing Successful Experimentation:*

1. Managing well: I4ID's contact point within the government knew her organisation and knew what drove decision making. She devised the exam trial as a way to influence the country's examination body. She also knew to avoid certain agencies who would take an 'over-medicalised' approach to inclusive education, advocating for hearing aids and braille readers, as opposed to fundamentally changing the way deaf children were taught and assessed. Thus, she was able to guide I4ID toward the institute responsible for curriculum improvement, who proved to be an eager and agile partner.

This strong understanding of the Ministry and agencies was vital for steering I4ID in a productive direction. Advice that helps a reform agent like I4ID navigate a complex political economy is essential for moving experimentation in a productive direction. It is also a good sign from a government partner that the results may be promising.

2. Observing keenly: Given the public's attention, all actors were aware of the low performance of deaf educational institutions. The fact that Ministry staff quickly partnered with I4ID to diagnose the problem that led to the Njombe failure and perform the exam trial also speaks to the keen attention stakeholders gave to the context. The initial study effectively established the parameters of the context for all partners.
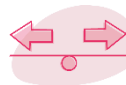
3. Mediating between the organisation and the context: The exam trial, which judged the same set of students using examiners with an understanding of sign language syntax and examiners with no understanding of sign language syntax, is a perfect example of seeking feedback in the effort to use it specifically for performance improvement.

Contextual Factors that Influenced Successful Experimentation:

1. Space for variation: The space for variation around reforms in Inclusive Education is indicated by two factors: existing momentum for reform and messaging from Tanzanian leadership. First, the Ministry was considered to be strong and proactive in devising a way to address the crisis in the education of deaf children. According to I4ID staff, 'when we made a compelling case about the exam format, they pushed a trial' to test whether using examiners with a strong understanding of sign language syntax would influence the way exams were marked. This immediate interest and willingness to experiment

---

[7] World Bank Open Data, available at: data.worldbank.org

demonstrates that Ministry officials already felt some level of freedom to innovate. Second, in neopatrimonial governance systems in which most decisions require sign-off by higher authorities, pressure put on those authorities for reform both allows for more variation and rewards innovators for risky decisions that produce desirable results. In that sense, the political context at the time, guided by a direct, public accountability–focused style of leadership, created space for bureaucrats within government who were interested in problem-solving to address performance gaps.

2. Pressure for selection: Senior political pressure certainly played a role in pushing actors within the Ministry of Education to act swiftly and demonstrate quick progress in response to the national attention paid to the 2018 exam failure. But the exam failure itself probably exerted the most overt pressure to demonstrate success. Public reproaches of Ministers for poor performance, demanding 'outcomes, not outputs', combined with the popular attention focused on the exam failure to create a significant reward for rapid problem-solving that would lead to a satisfying solution to the wicked problem of improving education for deaf students in Tanzania.

With these conditions present, I4ID was able to support the Ministry of Education to experiment quickly, identify feasible solutions to the challenge of educating deaf students, and achieve locally appropriate, meaningful reforms that impacted those students.

Example 2: Solid Waste Management

I4ID spent three years working with businesses, local government and CSOs to promote improved solid waste management (SWM) in communities around Dar es Salaam, Tanzania's largest city. This example shows how the three organisational factors and two contextual factors relevant for successful experimentation manifested differently in these three types of actors, resulting in very different outcomes.

Scenario:

Dar es Salaam, the coastal home to an estimated 7 million Tanzanians, suffers from a significant lack of

SWM options. The city's waterways are often clogged with trash and many areas, especially informal settlements, are choked with refuse. Combined with scant access to clean water, poor SWM creates infrastructure challenges and regular public health crises, including residential flooding and cholera outbreaks.

To address a set of specific problems within the larger issue of SWM, I4ID developed a multi-point intervention to pilot a wide variety of experiments with small businesses, one of the five municipal authorities within Dar es Salaam, and several CSOs. The **companies**, frustrated by the challenge of getting low-income residents to pay for SWM services, experimented with fee collection methods and even giving residents bags to make it easier to collect rubbish. The most successful private sector partnership I4ID managed was with a local SWM service provider and small business that was already piloting novel fee collection strategies when it encountered I4ID. I4ID provided it with modest financial support through the purchase of geo-tags and a link to a team that helped the company build digital addresses for its customers, essentially geo-tagging every residence and business in the area. By making it easier to identify and serve specific paying customers, this innovation helped the company boost its revenue by 50 percent across three pilot wards.

Meanwhile, one of the Dar es Salaam **municipalities** worked with I4ID to develop new contracting models that devolved authority for contracting small SWM service providers down to the level of the Mtaa, a subdivision of a municipal ward and the smallest unit of local government in Tanzania. This novel contracting arrangement encouraged SWM service providers to pay more attention to underserved wards, making them eligible for 3- to 6-month contracts that could be renewed based on performance. This innovation created 'a serviceable market for small professional companies who would otherwise have been excluded for the larger municipal procurement lenders',[8] and was being copied by other municipalities in Dar es Salaam as the programme came to a close.

---

[8] I4ID Outcome Case Study: Solid Waste Management, 2020

I4ID's work with **CSOs** in the SWM workstream was less productive. The programme tried multiple times to engage with two CSOs but failed to reach agreement on common goals. I4ID also had significant concerns about the capacities and lack of focus evident during conversations with representatives of these organisations.

*Organisational Factors Influencing Successful Experimentation:*

1. **Managing well:** In both of the successful partnerships – with the private company and municipality – I4ID encountered energetic organisations with reputations for good management. The private SWM service provider brought a reputation for innovative work and an existing positive relationship with local government counterparts.[9] And I4ID already knew that the municipality was a 'pocket of effectiveness' within a larger system of municipalities – in that case, I4ID did not contribute to a pocket of effectiveness so much as it found one and started working with it before engaging other municipalities, hoping to use success with one municipality as a means of demonstrating the success of whatever models showed themselves to be useful. In addition, both partners were already focused on specific issues that they could easily describe in conversation with I4ID staff, while also describing in detail the contextual challenges that made those issues difficult. The private company, in particular, 'was driven by passionate people who also saw that a lot of the issues they were facing were systemic structural issues'. The CSOs that made for unproductive partners, on the other hand, were 'linear work planners' accustomed to taking grants and direction from funders, with few innovative ideas of their own. 'Every time we talked to them', I4ID staff remarked, 'they came back with the same large, stock proposal.'[10]

2. **Observing keenly:** SWM was at the centre of the company's business model and was at the centre of the municipality's service agenda. Arguably, given that the two CSOs were focused on the SWM sector, they also had significant knowledge of the context. However, in those cases, the organisations failed to demonstrate the detailed problem understanding that indicates a promising partner for experimentation – the fact that they provided stock workplans, potentially fundable by any donor, when asked to explain their priorities, shows that they were not necessarily interested in developing the nuanced contextual understanding required to successfully navigate a process of experimentation to find smart solutions to wicked problems.
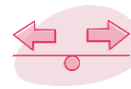
3. **Mediating between the organisation and the context:** I4ID wrote that what all of its successful SWM interventions had in common was that, '[r]ather than rely on lengthy research, we looked for opportunities to co-create and support small prototypes that would deepen our understanding of problems and possible solutions by involving practitioners into a problem-driven process.'[11] Even in the case of the municipality, which may not have been accustomed to the problem-driven process espoused by I4ID, it was still eager to embrace it. Again, the CSOs showed less willingness to experiment and more expectation of typical funder/service provision relationship with I4ID, in which they would receive funds with directions and act as an extension of the funder's larger plan, rather than as a local problem-solver keen to muddle its way toward solutions (and enabled to do so partially through programme support).

Contextual Factors that Influenced Successful Experimentation:

1. **Space for variation:** It is likely that a private company's space for variation is significantly larger, in most circumstances, than that of government agencies and CSOs. Especially for small businesses, managers are able to pivot on short notice to take advantage of new opportunities or avoid threats, so long as they have the capacity and information to do so. I4ID's private company partner was a nimble small business that operated in a poorly regulated environment in which innovation was limited more by consumer factors (the difficulty of tracking them and their unwillingness to pay for SWM services) than by a lack of permission for trying new things. The municipality, again, had a strong reputation within Dar es Salaam's

---

[9] I4ID Midterm Review, 2020

[10] Interview with I4ID staff member

[11] I4ID Outcome Case Study: Solid Waste Management, 2020

five-municipality system, giving the progrmme confidence that they could at least give innovations an honest try in partnership with the municipality.

2. Pressure for selection: As with space for variation, the pressure for selection is more straightforward for private companies. Under most market conditions, when a company fields a new product or service that meets a consumer need at an acceptable price point, consumers respond by rewarding the company with purchases of the new product or service. The profit incentive in the private sector makes market development work easier, in many cases, than work with government and CSO actors. However, at the same time, the lack of residents' willingness to pay for a service undermines selective pressure by making it difficult for businesses to reap rewards for innovation. Both the contracting model pioneered by the municipality and the geotagging pilot developed by the company and mapping team helped to address this gap, putting in place mechanisms for rewarding high-quality service provision for low-income households. In I4ID's words, 'the new contracting model created a serviceable market for small professional companies.' By the programme's close, that model was being adopted by other municipalities in Dar es Salaam. For the CSOs, on the other hand, I4ID felt they had not been given any incentive to problem-solve, 'just to problematise' in the hope of receiving donor funds.

> "When it works is when we've taken a bunch of actors who've had something to contribute and responded to their incentives. Whether it's about expanding their business or advancing their career or pushing a policy agenda. We never strived to push actors to work together. More often than not, you're working with individuals just tinkering with their own piece of the puzzle."

Interview with I4ID team member

With this set of partners, I4ID was able to experiment with an energetic set of private companies and a capable local government, fostering a set of SWM-related contracting and business model innovations that fit the institutional, economic and social context.

4. TIPS FOR DONORS, IMPLEMENTING PARTNERS AND OTHER ACTORS

This Learning Brief argues that three organisational factors and two contextual factors help to explain why some partners are better at experimenting toward solutions to difficult problems than others: the organisation brings knowledge of its own abilities and is operating context, plus willingness to experiment; meanwhile, the context provides permission for variation and pressure for selection. Using I4ID's issue-based programming as a starting point, the Brief found its analytical lens in a literature review and focuses on specific examples of successful and unsuccessful partnerships in I4ID's SWM and Inclusive Education workstreams. Five key recommendations follow from this discussion:

Look for entrepreneurs, CSO managers and public agency bureaucrats who are knowledgeable of their organisations and realistic about their challenges.

- For public servants, look for a strong understanding of the local political economy that will allow for successfully steering reform efforts. Advice that helps a reform agent navigate a complex political economy is essential. It is also a good sign from a government partner that the results may be promising.

- Looking for partners is an informal process, which some I4ID staff likened to 'getting out of the office and talking about trash'. In other words, '...connecting to local stakeholders with interest and influence is really central to the whole approach.'

- There are, of course, other considerations to be taken into account when selecting partners, such as the extent to which their objectives align with those of the programme, such as gender equality and social inclusion.

Look for explicit willingness to experiment, with excitement around specific ideas (in line with overarching objectives) that need to be tested

- As the I4ID team suggests, 'identifying passionate organisations has been key to this, and the partners in the SWM workstream have delivered far greater value for money than many

of the professional NGOs and think tanks engaged on other workstreams.'

- However, it is not sufficient to simply express willingness to experiment – good partners have a good idea of what needs testing and how to do it (the ideas for experiment should not all be coming from the programme) and express goals that are aligned to the programme's objectives.

- A quick test is to 'ask about the ideas that keep them up at night. What are those opportunities adjacent to what you're doing, that you would expand to if you had the resources?'

- Especially with CSOs, 'You want to see them talk about things they want to try out, versus things they just want to implement.'

Keep the authorising environment in mind – the space for variation within which innovators have license to tinker with problem-solving

- Private companies usually have more room for tinkering with their business models, whereas government agencies are often constrained by volumes of procedures and protocol. When trying to gauge a partner's ability to productively tinker its way into a solution, consider whether the context allows for innovation, in the first place, and where the guardrails for innovation might be.

Examine the pressure for selection, the incentive structure around innovators that rewards certain behaviours and punishes others

- With public agencies: is the pressure for selection actually adverse to innovation? This can be true for normative environments that discourage risk and experiment.

- Without the pressure for selection, innovators experimenting within a wide space for variation lack rewards for successfully experimenting.

- Development actors should ask: in a given context, what is the reward for successfully experimenting? If that question cannot be confidently answered, a programme should either first work to establish that pressure, or proceed with the understanding that the results of successful experimentation will be unlikely to take root and create any long-term impact.

Because this is an experimental process, stay flexible throughout the process in terms of what qualifies as success

- A member of the I4ID team described this well: 'As you're muddling through, it becomes clearer what the outcomes should be.' In other words, development actors should have the ability to make outcomes clearer as they move forward. 'These are workstream outcomes, not high-level programme outcomes. The latter should be clear. But flexibility needs to be there for the workstream outcomes.'

- Be open to new directions that will almost certainly emerge during the experimental process. As one I4ID staffer put it, 'when you start working on an issue, you may find that opportunities emerge to do something that is complementary to what you're working on. It's about pushing forward to seeing what works and being open to emerging opportunities.'

- But be demanding of results and be ready to stop supporting an experiment if it looks unpromising. This is hard decision to make (and one I4ID could have made more often) but is vital to avoiding the appearance of supporting endless experimental adventures without much promise of results.

REFERENCES

1. Andrews, et al. Escaping Capability Traps through Problem-Driven Iterative Adaption, 2012
2. Ang, Yuen Y. How China Escaped the Poverty Trap, 2019
3. I4ID Midterm Review, 2020
4. I4ID Outcome Case Study: Solid Waste Management, 2020
5. I4ID Outcome Case Study: Solid Waste Management, 2020
6. I4ID Project Completion Report, 2020
7. Interview with Glenda Eoyang, March 28, 2021
8. Interview with I4ID team members
9. McDonnel, Erin M., Patchwork Leviathan: Pockets of bureaucratic effectiveness in developing states, 2020
10. World Bank Open Data, available at: data.worldbank.org