



Designing sustainable surveillance systems

Lessons from the Fleming Fund for future antimicrobial resistance and broader disease surveillance programmes

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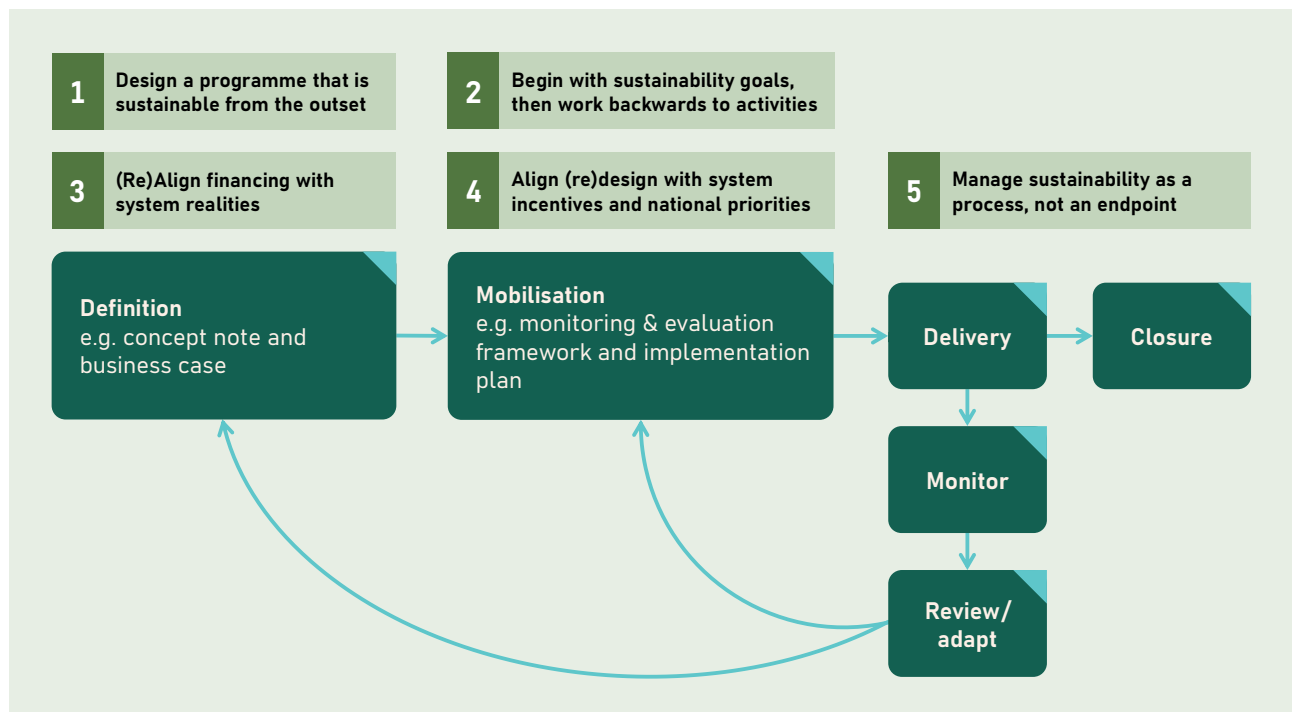
Acronyms

AMR	Antimicrobial Resistance
DHSC	Department of Health and Social Care
LMIC	Low and Middle-Income Country
MA	Management Agent
NAP	National Action Plan
ODA	Official Development Assistance
RDCs	Reagents, Drugs and Consumables

There is no lack of advice on what needs to be done to improve the sustainability of development programmes, but practical guidance on how to apply it can be harder to find. This learning brief by Itad, the independent evaluator of the Fleming Fund, aims to provide both the ‘what’ and the ‘how’ to those involved in commissioning, designing, implementing and supporting sustainable antimicrobial resistance (AMR) and broader disease surveillance programmes (see Box 1). Written at a time of shrinking official development assistance (ODA) funding, we take the lessons learned by the Fleming Fund and consider how they can be successfully applied in a funding context that has changed considerably since the Fund was conceived.

The Fleming Fund was a flagship investment by the UK, housed within the Department of Health and Social Care (DHSC), which strengthened AMR surveillance in low and middle-income countries (LMICs) across Africa and Asia. Following a design phase, the Fund was implemented through two phases of funding from 2017 to 2026, during which time Itad and the Fund’s management agent (MA), Mott MacDonald, documented their findings and learning about sustainability (see p.10). This brief builds on those publications to examine how design choices and planning shape long-term sustainability, which we present as five lessons (see Figure 1).

Figure 1: Five lessons on sustainable surveillance systems, mapped against stages in a programme



What do we mean by “sustainable surveillance programmes”?

As emphasised throughout this paper, sustainability is best understood in relation to the outcomes that an intervention seeks to achieve. Rather than a fixed end-state, it is a guiding principle for programme design and implementation: a continuous process of assessing how health goals can be achieved in ways that can be maintained by local institutions, resources and systems over time.

In the context of AMR, we define a sustainable surveillance programme as one that contributes to AMR containment and stewardship objectives through approaches that can realistically be supported by domestic health systems. Sustainability is unlikely where interventions are poorly aligned with local priorities, capacities or demand. Surveillance should therefore be viewed as a means to achieving broader public health goals rather than as an end in itself. The objective is not simply to continue producing surveillance data but to ensure that data generation and use support decision making and action over the long term.

This distinction highlights the difference between sustaining a surveillance function and sustaining a particular surveillance model. A surveillance function refers to the ongoing ability of a health system to generate, analyse and use information needed for decision making, whereas a surveillance model refers to the specific configuration through which that function is delivered.

Sustainability does not necessarily require preserving all activities, infrastructure or delivery arrangements introduced through external support. Rather, it requires maintaining the capacity to generate and use information that supports action, while adapting delivery models to local realities and resource constraints. In practice, the key question is not whether a particular surveillance model can be sustained unchanged but whether the surveillance function required to support decision making and action can be maintained in ways that are feasible, affordable, and valued within the local context.

The first four lessons focus on critical design-stage considerations: defining sustainability goals, selecting context-appropriate models, ensuring financial feasibility, and aligning with system incentives. The final lesson emphasises the need to actively manage and track sustainability throughout implementation. Together they reflect the interdependent factors that shape whether investments can be sustained in practice, providing practical guidance for strengthening the integration, ownership and durability of future surveillance investments. Although many of these lessons are well established, the challenge lies in their operationalisation, and this brief focuses on how they can be better applied in practice, bearing in mind the current ODA funding situation.



1. Design a programme that is sustainable from the outset

The choices made early in a programme's design have a significant effect on its sustainability. At the design stage, the Fleming Fund faced a challenge that is familiar to architects of development programmes: managing the tension between achieving results within limited time frames and prioritising sustainability. One demand on a surveillance programme is to achieve strong data generation and laboratory strengthening within the programme's lifespan, and hence the potential for associated outcomes in diagnostic services and changes in practice, regulation and policy. Equally, there is a need to align closer within existing LMIC fiscal space, supply chains and infrastructure to improve sustainability prospects, but the trade-off here might be lower prospects and longer time frames for outcome achievement.

The Fleming Fund was conceived in a different era – before Covid-19 and worldwide aid cuts. In practice, the Fleming Fund was delivered through two phases of funding, which presented the opportunity to introduce “strategic shifts” whereby certain priorities, including sustainability, could be given more emphasis. In today's constrained funding environment, building sustainability into programme design decisions is critical. Approaches that depend on high-cost technologies, complex supply chains or externally driven implementation models risk creating structural dependencies. Surveillance is more likely to endure when embedded in routine service delivery, particularly diagnostic services, and aligned with system capacities. Choosing the right design requires balancing technical ambition with affordability, scalability and long-term operational feasibility. A recent paper by the Fleming Fund's MA (Palmer, Chattoe-Brown, Leslie and Azore, 2025) reinforces this point, highlighting that passive surveillance linked to clinical care is more viable than resource-intensive stand-alone models, underscoring the need for a health systems strengthening approach.

Approaches misaligned with local capacities can be difficult to sustain, owing to their cost and the complexity of running them. Design choices, such as automation of laboratory equipment, can create long-term dependencies on approaches that may be difficult to afford with the resources available nationally. Although these approaches may improve quality and efficiency, they also introduce high recurrent costs and supply chain risks, particularly for consumables, which, in the Fleming Fund, emerged as a major sustainability constraint. As shown in studies by the Fund's MA (for example, Palmer, Chattoe-Brown, Leslie and Azore, 2025), reagents, drugs and consumables (RDCs) are the key cost component of AMR testing, and the Fund typically covered the majority of these costs, resulting in sustainability risks.

Programme design should consider carefully whether investment in infrastructure that requires expensive consumables (such as blood culture bottles) is justified by expected demand in different contexts, and what prospects exist for sustaining these investments once the programmes end. Although bacteriology testing inherently requires reagents and consumables,

lower-throughput laboratories may run more sustainably using simpler manual methods and non-proprietary supplies, reducing reliance on expensive equipment and service contracts. This highlights the importance of aligning surveillance models with local testing volumes, technical capacity and available recurrent financing.

Design considerations vary not only between countries but also within countries – especially in decentralised systems such as Pakistan and Nepal – and across different sectors. As discussed by the MA (Worth *et al.*, 2026), some targeted “vertical” strategies, such as active animal disease surveillance, are too expensive to sustain in many LMIC contexts. Indonesia’s costly broiler chicken active surveillance programmes, for example, highlighted the need for integrated approaches that combine vaccination, farmer education and AMR or disease surveillance into single visits to reduce costs and improve efficiency (Palmer, Chattoe-Brown and Leslie, 2025).



2. Begin with sustainability goals, then work backwards to activities

At the outset of programme design, sustainability goals and expectations should be explicitly defined, making it clear what is intended to be sustained, be it system capabilities, services, outcomes, or broader action towards desired project impact. Programme design should then work backwards from these goals, ensuring that activities, partnerships and delivery approaches are aligned with strategies to achieve them. Without this clarity, programmes risk focusing on sustainability of activities that do not ultimately ensure that the relevant conditions for long-term sustainability are in place.

Sustainability should be understood in terms of both retained infrastructure or activities and whether the incentives, mandates, resources and demand needed to sustain the routine production and use of surveillance data are still in place. In phase 2, the Fleming Fund invested significant time and effort in promoting sustainability, including through country-specific political economy analysis and sustainability plans. These were often focused on understanding what was needed to further the activities and outputs it already supported, rather than working backwards from desired system-level outcomes and then designing activities accordingly. This highlights how the room for influencing sustainability outcomes is limited once a programme has already been conceived down to the activity level.

The type of support provided by the Fund for AMR in LMICs was novel and had not been tried before at this scale. Prospects for it to translate into nationally owned activities within a 10-year time frame were always going to be limited. Given the shrinking funding climate, future AMR and surveillance programming will have to ensure that interventions are genuinely demand-driven and adapted to local priorities. Sustainability prospects are likely to be higher where activities align with national strategies, political incentives and system needs, rather than externally defined models. The Fleming Fund typically aligned activities with national strategies, such as AMR national action plans (NAPs), but barriers still appeared, owing to lack of political action and funding. On-paper priorities such as NAP documents may be donor-driven and in practice may lack political commitment, seldom fully reflecting local drivers, barriers and incentives; a nuanced understanding of these is key to developing sustainable interventions, as discussed next.



3. (Re)Align financing with system realities

Without realistic financing strategies, even programmes that succeed in making progress towards their outcomes risk collapse once external funding ends. Sustainability of funding is strengthened when programmes engage with how resources are generated, allocated and prioritised within national systems. Early clarity on financing pathways, including government budgets, health insurance and cost recovery, is essential and should inform implementation approaches. Recurrent costs, especially consumables, are often the most critical constraint.

Even well-designed models will not be sustained without credible financing pathways. In AMR surveillance, recurrent costs – especially consumables and reagents – are the decisive financial constraint on sustainability (Fleming Fund, 2025). High cost and procurement issues with blood culture bottles are an example of this: as discussed by the MA (Palmer *et al.*, 2025), these are sometimes described as the “weakest link in the chain”, with risks of stockouts directly undermining both surveillance and clinical services (Hyland *et al.*, 2025). Financing pathways must be defined early and linked to domestic systems. Evidence highlights the importance of integrating the cost of testing into national budgets, insurance schemes and procurement systems, rather than relying on external funding or parallel mechanisms.

Country ownership must be operationalised through concrete financing mechanisms and early engagement. Although country ownership was a core principle, as discussed by a recent MA paper (Palmer *et al.*, 2025), arguably the Fund missed opportunities to embed programmes within public finance systems from the outset, for example through co-financing arrangements or matched government contributions. As external development assistance declines, future financing models should place greater emphasis on securing government commitments to sustain investments through domestic budgets, as seen in mechanisms used by funders such as Gavi, the Vaccine Alliance, which requires country co-financing for vaccines, and The Global Fund to Fight AIDS, Tuberculosis and Malaria, which links funding to domestic resource mobilisation and sustainability planning. These negotiations take time to put in place and to take effect. Although the effectiveness of these approaches in securing long-term sustainability is mixed and context-dependent, embedding expectations and transition arrangements early can help strengthen accountability and create clearer pathways towards domestic ownership and will likely become increasingly important in a context of declining ODA.¹

¹ See <https://www.theglobalfund.org/en/sustainability-transition-and-co-financing> and <https://www.gavi.org/partner-countries/programmatic-policies/co-financing-policy>



4. Align (re)design with system incentives and national priorities

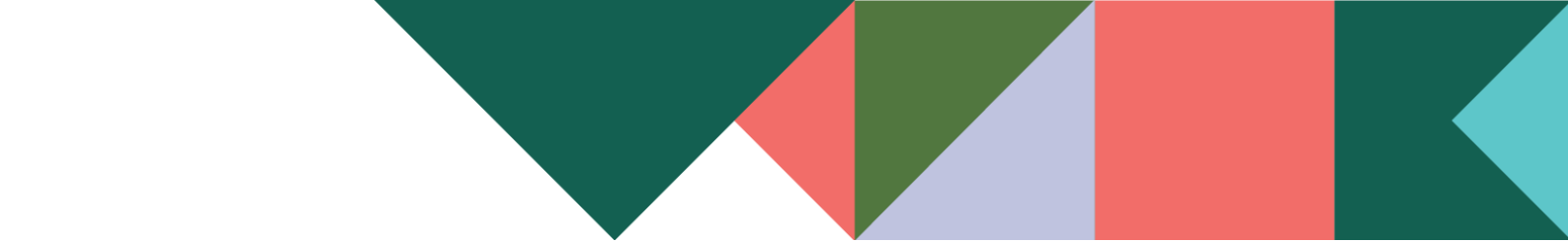
To endure, interventions must be embedded in national systems and aligned with incentives and priorities that drive decision making. This includes integration into planning, financing and service delivery structures, as well as engagement with actors who influence resource allocation. Even affordable and technically appropriate models may not be sustained unless prioritised within broader political and institutional contexts, but making this happen requires a specific set of capabilities and connections that may be lacking in programmes.

Sustainability depends on political prioritisation and decision-making processes, requiring active advocacy to budget holders. Early engagement with Ministries of Finance and other central actors is essential, because resource allocation decisions are shaped by political and fiscal dynamics.

As discussed in another Itad learning paper for the Fleming Fund (Drake *et al.*, 2026), development interventions often assume that resource allocation is driven primarily by evidence of need for action. However, technical evidence alone is rarely sufficient; translating data into compelling arguments for investment is a critical component of sustainability. Prioritisation and funding decisions are closely linked to how evidence is valued and used. Demonstrating value supports resource allocation but does not guarantee it; although economic evidence and data use can strengthen the case for investment, competing priorities and fiscal constraints mean that prioritisation decisions are still political and resource-bound.

Long-term sustainability depends on how well interventions are embedded within national systems and political processes. Integration across financing, governance, service delivery and data systems is essential to ensure continuity beyond external funding. In a constrained funding environment, programmes must align with domestic priorities and decision-making structures, recognising that sustainability is ultimately shaped by political choices about resource allocation and system priorities.

Evidence from the MA emphasises the importance of embedding AMR within broader health system functions – particularly diagnostics, insurance and planning – rather than maintaining vertical programmes. To deliver a sustainability strategy, programmes need to include certain activities and build specific capabilities which are often under-recognised in programme design. Chief among these are the expertise and ability to convene diverse stakeholders, engage politically with decision makers, and coordinate across actors with different mandates and incentives. This is something that the Fund promoted through targeted country-level Policy Fellowships. The Fund's experience also suggests that mechanisms such as multistakeholder roundtables can be effective in aligning priorities and mobilising commitment, particularly where they leverage the convening power of donors. However, their impact depends on being deployed early and consistently, rather than late in the programme cycle.



5. Manage sustainability as a process, not an endpoint

Although decisions made during initial design have a strong influence on the likelihood of a programme sustaining its impact, the work of sustainability continues into implementation. Sustainability is best considered a process that must be actively managed throughout the programme's lifetime. Delivering this requires clear strategies, measurable milestones, and ongoing monitoring of whether the necessary resources, capacities and incentives are being built. Late or weakly embedded sustainability planning reduces the likelihood of successful transition, particularly in time-bound programmes operating in complex and resource-constrained environments.

Across the evaluation findings, a consistent theme is that sustainability is less constrained by knowledge gaps than by the ability to translate principles into coordinated action across actors, systems and time frames. Governments, donors, implementers and technical partners each play distinct roles, so strategies should clearly define responsibilities. In complex multi-grant programmes such as the Fleming Fund, there is a risk of sustainability efforts being isolated and focused only on furthering grant-specific activities. Good planning requires explicit strategies that work across a project's portfolio of interventions, linking grant activities to project outcomes and objectives as a key mechanism for tracking progress. Theories of change can be a useful tool to support this. Progress should be monitored through intermediate indicators, not just end-of-project outcomes. Given long timelines for system change, tracking trajectory (e.g. budget integration, procurement shifts, data use) is more realistic than relying on post-programme evaluation, which is rarely catered for. Fleming Fund learning suggests that this should reflect how to ensure that the necessary resources, capacity and motivation are in place to sustain the desired goal.

The Fleming Fund's closure provides an opportunity to reflect on how sustainability can be supported during the final phase of a programme, while also illustrating that when sustainability planning becomes a priority only late in implementation, or lacks clear ownership, transition activities risk being curtailed or deprioritised. Following the short notice decision in June 2025 to close the Fund at the end of phase 2, approximately nine months before programme completion, considerable effort was directed towards facilitating transition. Significant activity was instituted, including increased emphasis on working politically involving government to government negotiations; agreeing new funding to extend support in order that domestic processes have time to adapt or for other sources of funding to be identified; proactive effort to secure ongoing involvement from other actors; exit planning and asset transfer; and documenting learning for future programmes. Although it is too early to assess the effectiveness of these measures, they illustrate that programme closure should focus less on sustaining all activities and more on enabling an orderly transition of the functions and relationships most critical to achieving long-term outcomes.

In this paper we have proposed five ways in which those commissioning, designing and managing AMR and broader disease surveillance programmes can improve their chances of sustainability. Putting each of these into practice, however, requires difficult decisions to be made, not least how to satisfy the need to produce measurable results within the life of the programme while working on activities that mean that surveillance functions have a strong likelihood of enduring after closure. As a set, these suggestions highlight the importance of spending time in the design phase planning for sustainability. But a key lesson from the Fleming Fund is that sustainability needs to be a live topic of conversation throughout the programme. Grounding interventions in their intended use, system realities and long-term feasibility is essential to ensuring that limited resources translate into lasting impact. When the context in which a programme operates changes, as it inevitably will, decisions made during design will need to be revisited so that progress achieved during implementation can be sustained. Ultimately, the objective is not to preserve a particular surveillance model unchanged but to maintain the surveillance functions needed to support decision making and action in ways that remain feasible, affordable, and valued within the local context.

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Other related resources from the Fleming Fund

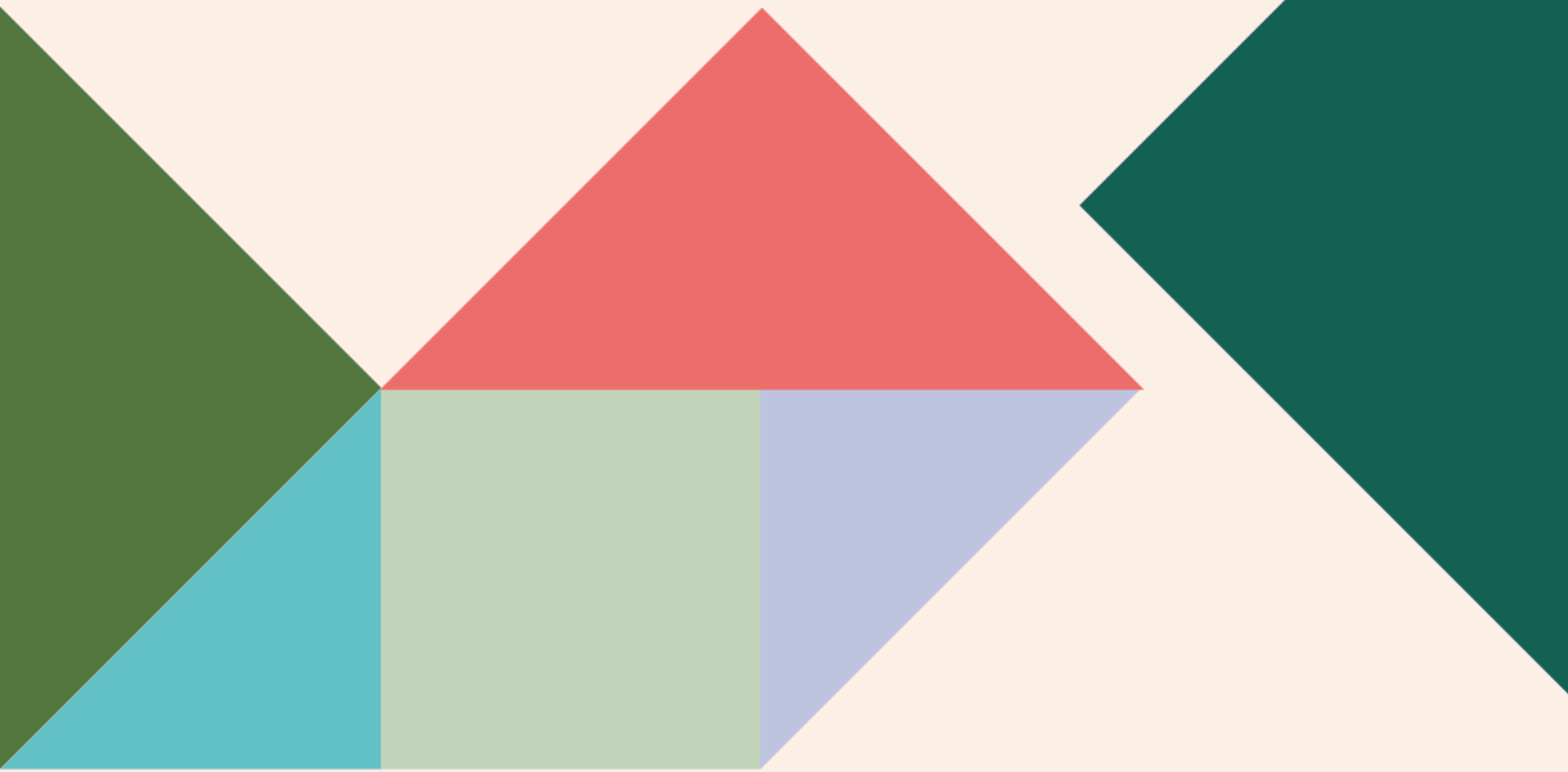
A collection of the Fleming Fund's learning products is hosted on The Global Health Network website in a dedicated Fleming Fund Knowledge Hub at <https://flemingfundknowledgehub.tghn.org/>

Fleming Fund phase 1 and 2 evaluations

At the end of each phase of the Fleming Fund, Itad (the Fund's evaluation partner) produced a summative evaluation report, assessing how far the Fleming Fund contributed to its intended outcomes and impact. The report on phase 2 is forthcoming and will be made available from the Fleming Fund Knowledge Hub, along with other Itad learning products about the Fund.



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