

AI BY & FOR ALL

FAIR Forward
Lessons learned



Part (2): Lessons Learned

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ABOUT THE REPLICATION KIT

The FAIR Forward **Replication Kit** brings together the initiative's key experiences and proven methods in the areas of open-source and locally anchored AI, capacity building and responsible AI governance from 2019 to 2026. Designed specifically for practitioners, learners, organisations, institutions and governments, it contains lessons learned, methodologies, playbooks, studies, open-source datasets, AI models and implementation guidance, which can be adapted and replicated in different contexts.

The replication kit contains the following:

- Replication part (1): Five FAIR Forward products for institutions, governments and development partners & replication kit for AI practitioners
- **Replication part (2): Lessons learned - [THIS DOCUMENT]**
- Replication part (3): Playbooks, handbooks and studies
- Replication part (4): Catalog of open-source datasets, AI models and AI systems
- Replication part (5): Key actions of FAIR Forward with links to key information

Get access to the full replication kit at:

<https://www.bmz-digital.global/en/overview-of-initiatives/fair-forward/#replicationkit>

01 Learnings: Access to training data and AI technologies for local innovation

How to get to a local-running AI system

Lesson 1.1

AI Hackathons are not a one-stop-only ride. They are rather a capacity building exercise. Follow-up on their results and establishment of local data infrastructure and governance matters.

What we learnt

- One-off hackathons on AI data or AI models can be effective engagement tools and useful for piloting ideas, but on their own they rarely result in sustainable AI products or use cases. Without longer formats, structured follow-up, and implementation pathways, outputs often remain unused. Adding post-hack support (for example, fellowships), stronger organiser presence, and anchoring data in local platforms improves quality, sustainability, and long-term uptake.
- Hackathon can however work as capacity building exercise by confronting people with "real-world" datasets and AI for impact as a general topic. It should then be framed accordingly.
- Some providers were sometimes very slow in paying winners and some winners were not on board to open-source their solution.

How we learnt it

A large African institution initially requested a short "AI for sector A" hackathon but later shifted to a one-year innovation challenge to increase sustainability and African-led solutions. Similarly, some of our early hackathons with a large hackathon platform showed limited impact until data was hosted on a government data exchange platform, encouraging participants to engage directly with public infrastructure.

Even hackathons where we spent significant time supporting the team in formulating the research question and refining the evaluation methods and organising "high-level" (government side for example in India) participation in the wrap-up event did not yield to sustained efforts on the dataset.

Whether hackathons significantly increased outreach of datasets is also questionable and unclear.

What to do if you want to replicate this

- Use longer challenge formats (several months to one year),
- Include fellowships to refine the outputs for a small number of promising teams
- Ensure continuous, on-site, or structured engagement.
- Where possible, host datasets on partner or government platforms and involve local institutions in data pre-processing and code review to build capacity and reduce dependency on external platforms.
- Have a clear idea what you want to achieve:
 - If it is capacity building with real world data - then yes, a simple hackathon may work.
 - If you want to build a real use-case, you should have the framework in place to absorb the solutions and sustain them or use another tool, not a hackathon

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Lesson 1.2

Incubators and accelerators alone do not build ecosystems; they can even reinforce monopolies. Plus: open-source requirements need calibration

What we learnt

- Start-up support formats only work when they are locally embedded, anchored by a regional or national partner, and designed for continuity beyond a single cohort.
- Generic accelerators without thematic focus, committed technical mentoring, or long-term ownership tend to fail at ecosystem building.
- Missing open sourcing can lead to local monopolies instead of creating local markets for several start-ups.
- At the same time, too rigid requirements (such as mandatory open-sourcing of full stack at application stage) can exclude promising teams rather than support them.

How we learnt it

The initial “Africa AI Accelerator” was challenged by the Corona-related loss of its planned technical partner, the absence of a long-term anchor institution, a broad cohort, and an untested open-source requirement that turned out to reduce participation. The later “AI & Climate Change start-up program/ innovation challenge” took these lessons into account by securing an engaged technical partner and designing replication through a single contractor model for Smart Africa, and by calibrating open-sourcing requirements to local circumstances.

What to do if you want to replicate this

- Select an anchor partner that can remain engaged and fund continuation, define a clear thematic focus, and secure technical mentoring early.
- Frame open source as enablement (“we support you in open-sourcing” or in leveraging existing open-sourcing and then contributing back to a commons) rather than a hard eligibility condition.
- Build replication into program design to support reuse and scaling.
- Check “open-source AI business models” and gear open-source requirements towards them.
- Consider replicating the “Mentoring scheme on open-source business models” to marry start-up promotion with open-source AI promotion.

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Lesson 1.3

Local, running, public sector AI systems (often) require good expectation management, strong organisational backing, ecosystem partnerships, consideration of the whole AI life cycle

What we learnt

- Manage expectations with public partners from the start by clearly communicating timelines, functionalities, capabilities, risks, and uncertainties to ensure alignment on outcomes.
- (Open-source) AI applications in the public sector require strong organisational backing and often strategic high-level engagement to maintain momentum despite unforeseen challenges.
- One key challenge is access to administrative data. It can take much longer than expected and should ideally be secured before the project starts.
- Operational sustainability requires considering the full AI lifecycle from the beginning, including hosting, computing power, data governance, model performance, user needs, operations, maintenance, and deployment requirements.
- Public AI systems often depend on ecosystem partners, such as applied research institutions, technical government agencies, and local startups or companies, to support operations, maintenance, and further development.

How we learnt it

In one instance, partners expected a proof-of-concept stage solution that depended on longer term data collection to work immediately after the start of the data collection. Claims of the technology partner on the technical efficiency of their system added to the confusion as it did not concern the application of the system to the problem at hand. AI development projects in the public sector often run into challenges that were unforeseen or unaccounted for. In several cases, the required access to administrative data took much longer than expected on both sides e.g. due to the dependency on other public sector authorities or did not materialize at all due to wrong assumptions on the type of data available on the partner side. High-level backing of the initiative eventually helped to overcome inter-institutional misalignment. The full AI life cycle needs to be considered from the start of AI use case projects with the public sector including the capacities for operations and maintenance of AI solutions. In several cases, the partner and we did not have a sound operations and maintenance approach for a deployed AI system. In one case, the technical provider maintained the application pro-bono after the initial contract period which worked for the time when the application was most needed yet meant an unorderly shutdown after that. In several instances, the involvement of technically better staffed and equipped government agencies has worked well to improve technical sustainability. In one case, we developed a machine learning tool together with a national space agency and thereby not only compensated the missing expertise in the respective sector ministry but also enabled the integration of the tool into their existing system. For addressing (operational) challenges such as gaining access to required datasets, mobilising the required resources for co-development and later operation of AI systems, strong organisational backing is required for which in many instances high-level engagements have been helpful.

What to do if you want to replicate this

- Prioritise clear communication, transparency, and a detailed project scope to ensure good expectation management.
- Ensure strong organisational backing from the start to secure the necessary personnel and resources for AI initiatives.
- Identify the required datasets early and secure access before starting the project.
- Consider the full AI application lifecycle from the beginning to identify potential gaps at different stages.

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- Align early on a sound operations and maintenance approach, including the required resources and capacities.

Lesson 1.4

Ask the right questions about ethics when technology-building is happening not after it

What we learnt

- The teaching of ethics of responsible AI should not be a compliance check after the fact. When supporting the building of AI technologies, it is crucial to embed ethics into the building itself (e.g. through AI assessments and trainings on them).
- Also think deeply about what keeps people from acting ethically.
- Every step of the AI cycle should be paired with the ethical considerations that need to be taken into account.

How we learnt it

- In some cases, we first supported institutions in building AI systems and only later invited them to participate in an **AI assessment** focused on ethics, bias, and responsible use.
 - In other cases, we were able to embed the **AI assessment** directly into the development process. This meant starting before the system was built, reviewing key decisions during development, and iterating based on emerging risks.
 - This second approach proved to be much more effective, as it allowed for **ethics-by-design**. Important questions could be raised early, before design choices became difficult or impossible to correct.
 - One example was a training on potential biases, including **population bias**. If this issue is identified too late, it may no longer be possible to address it properly.
 - For instance, an AI system designed mainly for large-scale farms may not work well for small-scale farmers, even if they represent most of the intended users.
- In another training, we made a deliberate effort not to focus only on the technical aspects of AI. The bootcamp included a strong ethics component, which helped participants enter the AI field with responsible AI principles as part of their starting point, rather than as an add-on.

What to do if you want to replicate this

- Make "ethical AI assessments" mandatory for large AI-solution-building projects right from the beginning but also make sure to properly support this and have good local expertise to not make it too burdensome to builders of AI.
- Use the "Responsible AI assessments" method or similar tools right from the beginning. Check out the product "Trust AI? GIZ's ethics check" in the replication kit - Part (1): Five FAIR Forward Products for replication & Replication Kit for AI Practitioners and Learners ".
- As a development partner: Make sure, that all your Terms of Reference, grants or partnership agreements contain mandatory early checking of aspects related to ethics.
- For any AI training, make sure that one of the experts in the contract has a specific focus on AI ethics. But still consider doing them in the end - better late than never

Open-source AI in Africa and Asia – how it can work

Lesson 1.5	Doing business with stuff that's free. African & Asian open-source business models do work, but you must bundle them with complementary logic and general business training
What we learnt	• There was initially significant skepticism about whether enough companies and institutions would be willing to explore open-source AI business models. • A key concern was whether open-source AI could compete with more established proprietary business models that generate revenue through fully protected intellectual property. • The two rounds of the “open-source AI business model training and mentorship programme” involving more than 16 companies, demonstrated that open-source AI business models can work in Africa and Asia. • Many participating companies reported that they do not operate with a separate AI business model but instead integrate AI into broader services or existing business logics.
How we learnt it	When our partners ran the two rounds of the mentoring programme, we got the feedback that more integrated business model training is needed, and that the general business training lessons were sometimes equally crucial/relevant for the institutions to thrive in the market. When we talked to companies of another competition there were a lot of prejudices around "open-source", e.g. that you cannot use this commercially - after learning about the different "AI business models" around open-source AI they were quite open. So, a lot of explanations are needed.
What to do if you want to replicate this	• Ensure that mentoring and training programmes also address adjacent business model themes, including the integration of open-source AI products or services into broader business models. • Identify and respond to the key needs of participating companies in advance. • Include training in general business skills and themes, such as: ◦ investment readiness and funding sources, ◦ pitch deck preparation, ◦ communication and website presentation. • Address and debunk misconceptions about open-source AI and its usability in commercial contexts. • Recognise that some companies' core business models may limit their willingness to adopt open-source approaches, while others may be particularly well suited for them.

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Lesson 1.6

If you want to mandate open-source AI in public procurement, procurement rules can be a hurdle that needs to be dealt with.

What we learnt

- Mandating open-source AI under procurement law in many jurisdictions (e.g. German procurement law) can be challenging, as open-source requirements may initially be seen as restricting the market.
- Progress can be achieved by providing a structured and project-specific justification for open-source outputs.

How we learnt it

In the concrete case, we wanted to procure an open-source AI model for soil monitoring in one of our partner countries. The open-source requirement was needed from our point of view to (a) support AI market development with our partner, (b) allow for the possibility that the AI system can be developed and maintained independently, (c) account for the fact that this supports a long-term project in the partner country through the build-up of in-depth internal capacities without commitment to contract terms or the financial situation of the service provider, (d) make sure that maintenance and adjustments can be as cost-effective as possible, (e) ensure higher acceptance by cooperation partners through participatory control structures

What to do if you want to replicate this

- Consider drafting Terms of Reference (ToRs) that justify open source based on project-specific needs such as interoperability, maintainability, partner ownership, and cost-effective maintenance.
- Research which general guidelines for procuring open-source in the applicable jurisdiction exist and take their advice into account.
- Flag IT service classification requirements early where applicable.
- Emphasise prototype or pilot status where relevant.
- Keep procurement requirements concise.
- Use internal support structures, such as data helpdesks or data service centers, for security and data protection positioning.
- Use supporting documents as references where relevant

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Lesson 1.7

AI open data commons do emerge in Africa and Asia. But might require calibration for better inclusion of all voices and protection against exploitation of community-built resources

What we learnt

- Community-driven data sets can be built and shared openly when sustainability and responsibility are addressed.
- Dataset creation requires careful design choices around logistics, validation, and tooling.
- Privacy safeguards, fairness deliberations and contributor-friendly workflows are essential to avoid extractive practices.

How we learnt it

- **Inclusion through better logistics:** Low-resource language TTS projects showed that speaker travel logistics strongly affected participation, while using a dedicated app (Karya) significantly reduced validation and coordination effort. This also had a gender-component, because female speakers could not travel to the places as needed. The team therefore explored a “mobile studio” model to support scalable, distributed data collection. Complementary insights come from the Mozilla/FAIR Forward guidebook on sustaining open voice communities.
- **Fairness and avoiding extractive practices:** When working with large-scale data collection efforts such as the work of the Lacuna-Fund, we saw different approaches to the balance between full openness to share community-built stuff with the world and fears by communities to be subject to data extractivism. We got to the conclusion, that ultimately, there are six groups that need to feel that a fair sharing of any (monetary or general) value is happening: 1) Communities and organisations involved in the collection of the AI data 2) Communities and organisations who aggregate, curate and vet such data 3) Small, local institutions who nurture and use such data 4) People, who are represented in such data 5) Large international institutions and companies, who use (and might or not contribute back) 6) The general public (who expects to benefit from better translation tools or voice recognition tools etc.) Given the diverse interests of these groups, it's unlikely that a silver bullet exists satisfying everyone. Instead, we must engage in multi stakeholder dialogues to get everyone heard and agree on fair sharing principles and appropriate safeguards. One additional example of where we learned this: In an Indonesian AI project, the Indonesian community mapping network (JKPP), High Carbon Stock Approach Foundation (HCSA), and GIZ collaborate with local and indigenous communities using the Free, Prior, and Informed Consent (FPIC) process, known as Padiatapa in Indonesian, to address data ownership concerns. This ensures community involvement and consent, guiding AI data collection in forest areas. Key parties include landowners, users, and indirectly affected groups. Agreements include not sharing personal data, open sourcing trained classifiers, and removing geotags. By prioritising transparent communication and involving both direct and indirect parties, the consent process FPIC ensures AI technology development considers diverse perspectives, needs, and rights, fostering a collaborative environment with open access and respect for community interests, safeguarding against unintended consequences.

What to do if you want to replicate this

Inclusion through better logistics: Design data collection around contributor realities (location, time constraints), use tools that minimise manual validation effort, and consider scalable setups such as mobile studios. Fairness and avoiding extractive practices:

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- Make sure that you balance out the interests of all groups for a fair sharing of any (monetary or general) value. This can be done via multi stakeholder dialogue and a “free, prior, and informed consent” process with affected communities.
- Consider existing **data cooperative initiatives** such as Karya in India that are focused on returning the proceeds of data collection to the communities. - ask yourself, if possible monetary value might be lower than you foresee. --> If your community is worried that their AI commons might be unfairly exploited by others:
- Consider “share-alike” approaches to keep the power of community-driven innovation while avoiding privatisation of your open-source AI resource
- Collect and prioritise any **additional needs and demands** which you would like to ask from anyone (re)using your (open-source, share-alike data), such as - Sustainable **access to compute** to enable you to fully build an AI model and AI application - research and operational support in very specialised domains such as rooting out gender and race bias in datasets, conduct error analysis, etc.
- **Capacity building and skills development** to get from AI data to a running AI system (e.g. AI ops) - Quantised models that fit the computing/memory constraints of low-resource contexts or free credits to pretrained embeddings - Skills development in business models and sustainability plans that couple open-source (copyleft) AI with revenue streams
- **Other tools** that might be needed to provide a level-playing field and be aware that the playing field might be super-uneven even though.
- On **licensing**, be aware of potential downsides of a “share-alike” approach vis-à-vis a fully liberal open-source approach: e.g. less uptake in large-scale solutions that are operated by large companies, challenges to enforce share-alike requirements, limitation to some business models.
- Integrate **privacy and data-protection guidance** early into contracts and workflows, and document processes to support repeatable, community-driven maintenance.

How to get to high-quality localised AI training data the right way

Lesson 1.8 Collecting high-quality open data takes time, and success depends on methods and governance	
What we learnt	- Local, community-oriented data collection for localised AI is both operationally and socially complex. - Timelines, participant constraints, and methodological choices directly affect feasibility and data quality. - Governance mechanisms, including grant structures, can either enable iteration or constrain innovation. - Type of data collected (voice vs text) adds additional layers of complexity in terms of availability, access, copyright and downstream use.
How we learnt it	The large-scale funding scheme of the Lacuna fund showed, that on average, high-quality data collection needs between 1.5 and 2.5 years. This includes unforeseen hurdles that the teams encountered such as: - Ensuring proper conditions are in place before starting, including data governance and data quality considerations - Underestimating necessary approval processes and legal agreements needed, including with data collectors and data holders - Underestimating data collection (managing distances) and data acceptance by key stakeholders - Data availability does not mean data usability - Anticipating difficulties or delays with contracts with third party (e.g. data holders) - Technical challenges (i.e. species characterization from satellite data) - Practicalities such as accounting for potential staff turnover - External unforeseen challenges such as droughts, heat periods or heavy rainfall that can hinder field data collection A TTS data collection effort highlighted how travel distance and proximity to recording sites shaped participation, while a specific app reduced contributor burden. Separately, AIEP lessons showed that contractual arrangements e.g. implementing via grant agreements can impact innovation processes. Creating text Datasets in local languages in South Africa for localisation on Mozilla common voice revealed that public use / CC-0 content is either not easily available or inaccessible.
What to do if you want to replicate this	Ensure that your data collection has a plan for the following key dimensions of quality: - Specifications and deliverables for proposed data and documentation Intended beneficiaries and use cases - Methodology: Proposed data collection and labeling techniques, infrastructure and techniques to speed the collection, cleaning, and sharing of data, quality control measures, assess and mitigate error and bias - Problem identification and proposed solution and dataset - Transformational Impact - Data Management and Licensing - Risks, Including Ethics and Privacy

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- Sustainability & Communication Plan (including community-engagement for future maintenance and enlargement of datasets)
- Qualifications
- FAIR principles should be considered from the get-go. Embed the following learnings in your calls-for-dataset as recommended good practices for data-collection-projects:
 - Plan plenty of time for ethical approvals and planning for data definition
 - In the best case, iterate between collection, building of real live system and validation with native speakers/users for NLP Importance of legal expertise on the project team for licensing questions around data ownership in open-data projects
 - Incorporating indigenous protocols and data sovereignty to prevent harm to community
 - Considering replicability from the beginning of the project • Training to repeat field data collection protocols and engage students in data collection
 - Talking to your networks to figure out whether some data sets may already be available
 - Ensuring that data is traceable and easily shared (i.e. including search terms)
 - Importance of gender as a consideration
 - Test data first (with a pilot, for example) before the whole set creating a risk & mitigation plan
 - Documenting plans and agreements
 - Maintaining government relationship
 - Form a sustainability committee or similar group that includes dataset collection organisations and community stakeholders, possibly cutting across all domains, that are involved in creating datasets to share tools and optimise processes that serve the maintenance of datasets and continuation of research.
 - Support the willingness of dataset collection communities to self-govern localized collaborations/gatherings for knowledge sharing and increased access to resources and support through funding, raising awareness and assisting to coordinate their efforts
 - Budget realistically for field constraints (travel, recruitment, validation), select tools that lower burden for contributors, and design grant-based delivery with flexibility. Clarify roles early, build trust, and complement grants with other instruments when iterative delivery is required.
 - To create high quality text datasets:
 - Approaching benevolent actors to share content otherwise under license for use of open-source development of text datasets
 - Use of Wikipedia content (although this presented its own challenges with limited content available online)
 - Using translators to provide high quality, grammatically correct content (although also presenting challenges of having formal speech text and not colloquial, everyday lingua franca) of the community.
 - A STT approach can also be used in high quality datasets that exist in a language, but content needs grammatical verification and oversight.

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Lesson 1.9

Data findability, usability and sustainable maintenance are critical: invisibility is a real risk

What we learnt

- The key insight is that findability requires both structure and active signalling, without them even high-value datasets remain invisible to innovators.
- Sustainable maintenance needs careful planning from the beginning and the building of a re-use community around your dataset.
- Orientation can always be taken from FAIR principles (findability, accessibility, interoperability and reproducibility).
- In terms of replication, it should be clearly shown what can be replicated with the dataset and the steps should be well documented, if not even technically prepared.

How we learnt it

In many data collection exercises, e.g. with Lacuna-Fund, we saw that the question of data findability, usability and maintenance was only tackled towards the end of the project and was often not fully budgeted in the project plans. This created the situation, that the definition and clarification of these dimensions were suboptimal in the beginning of Lacuna-Fund. Also, in other projects, ensuring FAIR principles handover of data, models, applications have not been specified in the contract and contractors are difficult to reach after a contracting period is over and much work had to be done by the team internally. Another good example on ensuring FAIR use of data and models (more model driven example) is our solar irradiation project in Uganda where we decided to build a standalone python library that can be installed and downloaded in one click and per one command on each computer.

What to do if you want to replicate this

- Mandate the inclusion of data findability, usability and long-term maintenance in project plans and budgets.
- Provide dedicated "data-quality coaching" for grantees and mandate consideration of key steps (as in the "AI Training Dataset Sustainability Toolkit"):
- Clearly define the minimum requirements such as detailed documentation and appropriate hosting platform.
- Before Publishing
 - Produce high quality datasets
 - Create privacy-preserving datasets
 - Document your datasets extensively
 - Hosting your datasets after publishing
 - Promoting discoverability and reuse
 - Ethical considerations
 - Funding your project

02 Learnings: Strengthen local technical know-how on AI

Capacity building is not about more seats, it's about better fits

Lesson 2.1

Attract diverse audiences to AI trainings by curating programmes to fit women and minoritised groups and not the other way around

What we learnt

Fostering diversity in the field of AI is possible when you understand that trainings must fit women and not the other way around. Tailor trainings to fit the needs of women and diverse audiences by offering flexible schedules that allow them to balance learning with their caring duties, offer hybrid courses that are always recorded and with materials available in a platform. Making mums feel welcome starts by creating spaces for kids during onsite sessions and offering childcare support so mothers can focus on the learning. This also allows other participants to see that being a mum is not a limitation to continuing developing their professional career.

How we learnt it

By taking intentional steps with childcare spaces, and time allocations to fit women caring responsibilities, we got more applications from women, even in mixed training. Moreover, when we created women specific trainings in which from the call from applications mothers were invited to apply, we received an overwhelming number of applications.

What to do if you want to replicate this

Gender sensitive and transformative trainings require more effort from you, because you should understand the constraints that women and minoritised groups face to enter the field in their local context to effectively lower entry gates of the field. Consider also safety allocations.

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Lesson 2.2

Numerical scaling is not the solution systemic inequalities. Doing multiple small and locally tailored training courses is the key to develop marginalised groups.

What we learnt

The more tailored the better. Trainings that don't understand local contexts and local ecosystems tend to be less efficient and inclusive. Prioritise connection over big numbers. This doesn't mean that everything needs to be created from scratch. Only that some elements always need to be adapted to reflect the realities of participants.

How we learnt it

The AI and data science bootcamp for women and minoritised groups has been successfully implemented in 4 African countries and in Colombia, with more countries to come. The success lies on the intentional efforts to adapt it to different target audiences (e.g. unemployed people, students and civil society organisations), formats that vary from highly hybrid to mostly onsite and from multiple locations to one city only. And all this considering the specific context of each country.

What to do if you want to replicate this

Prefer local service providers and partners instead of a regional or global ones. Local service providers understand better how things work in their country, they can better support students and serve as a bridge between you and participants. Moreover, they can become part of the professional network of students. Finally, you support the development of the AI local ecosystem.

Why import what's already local? On talent & data

Lesson 2.3	AI capacity building programs should be developed from a position of abundance! There are fantastic cutting-edge experts and academic institutions in the global majority countries that can use our support to build more AI talent.
What we learnt	There are fantastic cutting-edge experts and academic institutions in the global majority countries that can use our support to build more AI talent. The narrative of 'talent abundance' unlocks funding opportunities for local partners by putting them in a stronger negotiating position, whereas the scarcity perspective, restricts such opportunities - routing them back to global North. The position of scarcity (lack of talent in African and other global majority regions) exacerbates the stereotypes and power dynamics that Africa is 'poor'.
How we learnt it	By prioritising local service providers and partners for capacity building programs and finding out the spillover effects in the ecosystem and the greater impact in the lives of participants. The bootcamp showcased that local partners go the extra mile, can relate to localized challenges and find innovative solutions and workarounds. Having a local partner produce a feminist first, local, AI curriculum empowered the team to better negotiate with an international partner and use it as leverage for support.
What to do if you want to replicate this	We highly recommend having people onsite to help you navigate the ecosystem. Consider making a partnership with local institutions mandatory even when you are looking at a mix of international and local implementers. Local partners are attractive implementers and can bring local challenges to light that need solutions. Such partnerships also help them to secure future funding and thus build more local talent. Clarify possible tendering regulations in advance with regard to local / international bidders.

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Lesson 2.4 Local datasets are key for relatable learning but sometimes difficult for course providers to locate.

What we learnt

- Open-source local datasets are essential, but promoting their use among students is equally important.
- Local datasets help students see that people in their own countries are already working in the AI field to address local needs.
- They also reinforce the idea that AI can be developed locally, not only in the Global North.

How we learnt it

It's hard to get course providers to look for local datasets and not to copy-paste the global ones or to use platforms, in which they only find local ones.

What to do if you want to replicate this

One solution could be to invite local practitioners to present their work and datasets to students. Another way is to create incentives for contractors, such as paying them for finding these datasets and creating activities with them. Finally, awarding students that work with local datasets for their capstone project. Ideally you actively share some resources with them.

There is no responsible AI if ethics comes after the fact

Lesson 2.5	Ask questions about ethics when technology-building is happening, not after it is done.
What we learnt	• The teaching of ethics of responsible AI should not be a compliance check after the fact. When supporting the building of AI technologies, it is crucial to embed ethics into the building itself (e.g. through AI assessments and trainings on them). • Also think deeply about what keeps people from acting ethically. • Every step of the AI cycle should be paired with the ethical considerations that need to be taken into account.
How we learnt it	• In some cases, we first supported institutions in building AI systems and only later invited them to participate in an AI assessment focused on ethics, bias, and responsible use. • In other cases, we were able to embed the AI assessment directly into the development process. This meant starting before the system was built, reviewing key decisions during development, and iterating based on emerging risks. • This second approach proved to be much more effective, as it allowed for ethics-by-design. Important questions could be raised early, before design choices became difficult or impossible to correct. • One example was a training on potential biases, including population bias. If this issue is identified too late, it may no longer be possible to address it properly. • For instance, an AI system designed mainly for large-scale farms may not work well for small-scale farmers, even if they represent most of the intended users. • In another training, we made a deliberate effort not to focus only on the technical aspects of AI. The bootcamp included a strong ethics component, which helped participants enter the AI field with responsible AI principles as part of their starting point, rather than as an add-on.
What to do if you want to replicate this	• Make "ethical AI assessments" mandatory for large AI-solution-building projects right from the beginning but also make sure to properly support this and have good local expertise to not make it too burdensome to builders of AI. • Use the "Responsible AI assessments" method or similar tools right from the beginning. Check out the product "Trust AI? GIZ's ethics check" in the replication kit - Part (1): Five FAIR Forward Products for replication & Replication Kit for AI Practitioners and Learners ". • As a development partner: Make sure, that all your Terms of Reference, grants or partnership agreements contain mandatory early checking of aspects related to ethics. • For any AI training, make sure that one of the experts in the contract has a specific focus on AI ethics. But still consider doing them in the end - better late than never

Local partnerships and open-source replication kits make learning more impactful and sustainable

Lesson 2.6

E-learning MOOCs are a good measure for sustainability but are more impactful when enhanced through partnerships with local institutions

What we learnt

E-learning courses become significantly more effective when developed in partnership with local institutions. These collaborations ensure a steady flow of participants as the courses can be integrated into regular programs or on-site trainings. Working with local partners also creates incentives to keep course content up to date, provides on-site support for technical issues and content-related questions, and enhances the course's appeal by offering certificates from respected institutions. This boosts participants' professional advancement. This approach not only increases the course's reach and relevance but also builds a sustainable structure for long-term impact.

How we learnt it

Together with Makerere University we have built multiple e-learning courses that were then integrated in the bachelor program for computer science at Makerere University. NEMISA in South Africa is also offering live e-learning courses of the AI and Data Science Bootcamp for women's MOOC. In India we have been working with the Data Security Council of India (DSCI) to develop courses on Indian data protection for AI developers with certificates by DSCI.

What to do if you want to replicate this

Pushing learning is more difficult than serving a specific need. Building an e-learning course together with a local partner from the beginning will help develop content that is appropriate for the target audience in both content, accessibility and interest. This collaboration can serve as an anchor user that will support further uptake by other institutions who can see the impact.

>>> FAIR FORWARD: LESSONS LEARNED

Lesson 2.7 Adopt replication kits and open-source materials to balance cost efficiency of curriculum development, then tailor courses to specific audiences

What we learnt	Using open-source licenses for learning resources is essential for enabling reuse and adaptation, but it alone does not guarantee widespread adoption. A replication kit can be a balanced solution, as it actively lowers barriers for others to tailor language, cultural context, and specific content to their audiences. A replication kit should include adaptable templates, guidelines, and modular content such as video, text etc. This approach not only enhances cost efficiency for adopters but can also accelerate the scaling and localisation of courses, making them more accessible and relevant to diverse learners.
How we learnt it	Together with Makerere University we have built multiple e-learning courses that were then integrated in the bachelor program for computer science at Makerere University. In addition, we have also created replication kits to ease adoption by others.
What to do if you want to replicate this	Build training programs on existing open educational resources and use open-source licenses to contribute to openly accessible learning material on AI for everyone. When doing so, adding an open license is a necessary requirement but it would help others to think about re-usable component (e.g. videos, texts, exercises).

>>> FAIR FORWARD: LESSONS LEARNED

Lesson 2.8 Partnerships on AI training with local universities takes time but is worth it.

What we learnt

Sometimes it makes sense to directly work with academia to develop AI related courses, particularly if the sustainability strategy involves adoption by universities. This also requires understanding the partners' processes and catering for them. Also, the topic of AI will need frequent updating of certain parts of content, which can only be provided by academia as part of teaching processes

How we learnt it

For various trainings we have been working with university partners to create open educational resources on AI and implement trainings. Given the institutional setup of academic organisations, it has taken more administrative effort to establish the partnership. However, university partners have then shown particularly helpful in updating content as they are close to the state-of-the-art development of AI.

What to do if you want to replicate this

Investing additional time for identifying long-term partners for trainings and developing learnings resources pays off. Some factors we have considered are: (1) number and diversity of AI experts within an organization to flexibly react to AI developments and people leaving organisations, (2) mix of academic/theoretical expertise and practical development experience, (3) experience in teaching and training outside of academic contexts.

03 Learnings: Develop policy frameworks for ethical AI, data protection and privacy

Lesson 3.1

Democratic input to AI policies is often not working (unequal playing field)

What we learnt	In practice, inclusive multi-stakeholder participation in AI policy processes tends to remain more aspirational than substantive. Civil society organisations are often structurally disadvantaged relative to private sector actors: they face resource constraints that limit sustained engagement, have more limited access to technical expertise, and are not consistently included in consultation processes. As a result, AI policy frameworks tend to be shaped disproportionately by industry perspectives, raising concerns around balance, representativeness, and democratic legitimacy.
How we learnt it	In the development of a major AI policy strategy, private sector actors were strongly represented, supported by organised advocacy and dedicated resources, while civil society participation remained comparatively limited. This imbalance can be traced to several factors, including the absence of targeted funding to support civil society engagement, more limited access to technical AI expertise within these organisations, and insufficient proactive outreach by the convening body to ensure their inclusion. The result was an uneven playing field that shaped the policy outcome accordingly.
What to do if you want to replicate this	Inclusivity in policy processes needs to be designed deliberately from the early stages rather than assumed. This includes allocating dedicated funding to enable civil society participation, providing capacity support for non-expert stakeholders, and embedding targeted outreach mechanisms into the process design. An open invitation alone does not ensure meaningful inclusion; structural barriers must be explicitly recognised and addressed.

>>> FAIR FORWARD: LESSONS LEARNED

Lesson 3.2 Cross-regional peer-exchange of policymakers is key, but needs time and consistency

What we learnt	Peer learning among policymakers across regions is one of the more effective ways to build a grounded understanding of AI governance challenges and possible responses. At the same time, this type of exchange requires sustained engagement and a meaningful investment of time from all parties; it cannot be compressed into short interactions or treated as a one-time event.
How we learnt it	Originally, we had planned to implement the “Africa-Asia AI Policymaker Network” within a two-year frame. The goal was to foster a support network on AI policy making and collective voice for African and Asian policymakers. However, we found that the most meaningful exchanges happened after three to five years. For instance, an exchange between Indonesian and Indian AI policymakers only came about in year five of the exchange program. Also, we found, that the longer face-to-face meeting of the network, for instance at the AfricAI conference 2023 were crucial to build trust and to enable stable dialogues with other stakeholder groups.
What to do if you want to replicate this	When designing peer exchange formats for AI policymakers, it is important to allow sufficient time for relationship-building, in-depth discussion, and continuity beyond initial interactions. Exchanges that are overly compressed risk remaining superficial. More structured and recurring formats, involving a consistent set of participants, tend to generate more meaningful and sustained learning than one-off engagements.

Lesson 3.3

Growing prioritization of AI sovereignty by governments in policy making processes

What we learnt

External support to national AI strategy and policy development is inherently sensitive. When perceived as foreign influence (whether from the EU, Germany, or other external actors) it can undermine both the legitimacy of the policy process and the credibility of the donor as a partner. Effective engagement therefore requires careful positioning: remaining in the background while enabling national ownership and providing technical and procedural support without dominating the process.

How we learnt it

In the case of a large African country, GIZ supported the development of a national AI strategy by contracting a service provider to facilitate a multi-stakeholder process and draft the strategy in close coordination with the responsible ministry. GIZ did not take up any role except for neutral facilitation, allowing national actors to lead and shape the process. This approach helped preserve ownership while still ensuring substantive technical and organizational support. However, GIZ was transparent about our own values on responsible AI. See also Lesson 3.4 "Trust is key".

What to do if you want to replicate this

As a development actor, make sure to focus on facilitation, technical and organizational support. At the same time, be transparent about your core values and approaches to sovereignty and responsible AI. Sovereignty does not have an official definition & might be different for each country: Need to define for specific contexts. Open source & sovereignty are not mutually exclusive & don't necessarily reinforce each other: Find a balance. AI sovereignty goes beyond just localized infrastructure.

>>> FAIR FORWARD: LESSONS LEARNED

Lesson 3.4 Trust is key

What we learnt	Countries and institutions need a high level of trust to collaborate on AI, especially because AI often touches sensitive areas such as data protection, privacy, public infrastructure, and national policy priorities.
How we learnt it	• Trust is not only needed between countries. It is also needed between partners and implementing agencies. As GIZ, this means ensuring that we hold ourselves to the same responsible AI standards that we promote externally, and that we are not simply used as a channel to “create something” without sufficient reflection on risks, values, and public interest. • This became clear in the request from a West-African country on the national AI strategy, where the role of GIZ was not only technical, but also linked to signaling alignment with responsible AI principles. Being consistent with and transparent about our own values strengthened our reputation as a trusted partner. • In another country, because GIZ was seen as a reliable and value-based partner, cooperation could move forward in a way that supported both implementation needs and responsible AI objectives. • Another important lesson is the need to remain agile and adapt to changing institutional realities. In an Asian country, FAIR Forward initially partnered with one partner on AI-related initiatives. However, after internal government changes and a shift in responsibilities, another partner was more interested in AI policy and implementation. The FAIR Forward team remained flexible and maintained strong working relationships with both institutions. This allowed the project to continue despite institutional changes.
What to do if you want to replicate this	For replication, AI cooperation should not be driven mainly by institutional self-interest or visibility. It should focus on building trust, creating space for collaboration, and ensuring that people and partner institutions have real agency in shaping AI systems and policies.

>>> FAIR FORWARD: LESSONS LEARNED

Lesson 3.5

Policy implementation trumps policy writing: resources, capacities, institution building, political will and long-term support are needed

What we learnt

- It is paramount to focus more on policy implementation than on policy writing. This relies mainly on resources, capacities, the building of implementation structures, political will and enough time to provide longer-term support to the beginning of implementation.

How we learnt it

- At times, we got requests to support with the writing of an AI policy. While this is an important first step, we found that the real work is in finding the following to ensure implementation:
- Resources: One country wrote the plan with clear costing of each action. This helped to have early discussions about implementation capacities and budgets
 - Capacities: In one country, the data protection office built capacities in parallel to the policy formulation to be ready to implement the policy once it got enacted.
 - Implementation structures / institution building: In one country, a new agency was founded to implement parts of the AI strategy. This took more time and the need to secure resources, but it allowed for stronger implementation afterwards.
 - Political will: In one country, the will to implement the policy changed after elections which enabled to move towards implementation more quickly afterwards.
 - Enough time to provide longer-term support to the beginning of implementation: In several countries, it took 3 to 4 years to write, discuss and then adopt the AI strategy. Only afterwards the implementation can begin.

What to do if you want to replicate this

- Be ready for long-term processes, that cannot be foreseen.
- Make the key parts of implementation part of the policy writing as described above.

>>> FAIR FORWARD: LESSONS LEARNED

Lesson 3.6

Timing is everything

What we learnt

- Policy processes cannot be foreseen and often are dependent on outside factors. Any support needs to be able to adjust to “the right timing”.

How we learnt it

- In several countries, it took 3 to 4 years to write, discuss and then adopt the AI strategy. Mostly, the adoption was linked to factors outside of the technical work e.g. events that triggered the adoption.

What to do if you want to replicate this

- Be ready to be surprised. Do not count on linear processes. Take factors such as events into account.

>>> FAIR FORWARD: LESSONS LEARNED

Lesson 3.7 Capacity building for policymakers is critical

What we learnt	• In the rapidly shifting world of AI, nobody is “on top of things”. Therefore, continuous building of capacities is critical.
How we learnt it	• When FAIR Forward started its “Africa-Asia AI Policymaker Network”, ChatGPT was not even launched. Therefore, the capacity-building programme constantly had to evolve and adapt to new technical, but also regulatory issues.
What to do if you want to replicate this	• Focus on building the structures for continuous peer-to-peer learning instead of curricula or technical courses, which will be outdated soon. • Focus on generalized principles of policy making and how they interfere with AI (e.g. risk-based approaches of regulation, principles of data protection, principles of fostering local innovation, principles of striving towards AI sovereignty) instead of concrete technical issues.

>>> FAIR FORWARD: LESSONS LEARNED

Lesson 3.8 Advise partner countries and organisations keeping in mind regional political climate around AI

What we learnt	• Politics of regional integration need to be accounted for during AI policy making and implementation • Understanding the “purpose” of AI strategy building is important (the purpose sometimes might mostly be a “signaling of Tech-awareness”, or sometimes rather be long-term building of foundations etc)
How we learnt it	• We found different bodies with different interests in the “purpose” of AI strategy building as well as a shifting regional political climate around AI.
What to do if you want to replicate this	• Make sure to understand well the regional political climate around AI and core motivations of (regional and other) actors to pursue AI strategy building.

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