

Decision Matrix

Remote Management, Monitoring, & Verification (RMMV) Guidebook for International Financial Cooperation



The RMMV Decision Matrix for Selecting the Appropriate Mix of RMMV Institutional Approaches, Tool Types, and Data Sources

Because of the multitude of different institutional approaches, tool types and data sources, a *Decision Matrix* has been developed to help KfW as well as PEA and consultant staff to jointly determine which mix of institutional RMMV approaches, technical tool types and data sources is particularly useful for the specific project. The *Decision Matrix* indicates which institutional approach, tool type and data source is suitable for which type of information that needs to be gathered and if there are potentially limiting human rights or legal conditions to be considered.

It is important to note that this matrix does not only facilitate the decision of KfW on the suitable mix of institutional approaches, tools, and data sources to select for the *Remote Verification* of the respective project, but also facilitates the joint decision of the PEA, different consultants, and other project stakeholders on the corresponding suitable mix of institutional approaches, tools and data sources for the (*Remote*) *Monitoring* of the respective project by the PEA and /or consultant.

To provide orientation on the usefulness of different institutional approaches, technical tool types, and data sources, information needs have been clustered into five general types that occur throughout the project cycle. These are information on:

- 1) Infrastructure quality and project progress including the use of funds
- 2) Target area(s)/target groups' identification
- 3) Target groups' needs and feedback
- 4) Project outcomes and impact (including usage)
- 5) Environmentally and socially adverse impacts and risks

They relate as following to the project cycle:


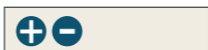


Clustering of Information Needs within the Project Cycle

Type of Information Need	Government Negotiations	Project Preparation & Feasibility Study	Project Appraisal	Grant or Loan Agreement	Tender of Consulting Services	Project Implementation	Start of Operation	Final Review	Ex-Post Evaluation
Infrastructure quality & project progress incl. use of funds						✓	✓	✓	✓
Target area(s)/target group(s) identification	✓	✓	✓						
Target groups' needs & feedback		✓	✓			✓	✓	✓	✓
Project outcomes & impact (incl. usage)						✓	✓	✓	✓
Environmentally and socially adverse impacts & risks		✓	✓			✓	✓	✓	✓

Applicability of institutional approaches or technical tool types and data sources per information need category

The matrix below shows how each institutional approach and tool type (incl. data source) supports information gathering for a respective information need category. If the approach or tool type is particularly useful for the respective information need, the box is marked green. If the approach or tool type is potentially useful, but there are limitations or risks (including potential violation of do-no-harm) regarding the ability of the approach or tool type to respond to the specific information need, the box is marked beige. In these cases, mitigation strategies are required.

If the institutional approach or tool type is considered potentially harmful in environments with human rights issues, particularly regarding freedom of expression, the box is marked red. If the approach or tool type is not relevant to the respective information need, the box remains white.




-  The approach/tool type is particularly useful
-  The approach/tool type may be applied, but risks need to be taken into consideration
-  The approach/tool type is potentially harmful (human rights risks) if risks cannot be mitigated
-  The approach/tool type is not relevant or useful

Context conditions that might limit the use of an approach or tool type (incl. data source):

In addition, the *Decision Matrix* specifies in its last two columns on the right-hand side, the conditions that may render using a specific approach or tool type difficult or impossible. For each approach or tool type, the two columns on the right show the two most important factors regarding context conditions that may limit or exclude the use of a specific institutional approach, tool type, or data source:

- 1) A fragile or conflict context implying a low level of governance, represented by "a low level of freedom of expression in a target country" is proposed as the most useful proxy indicator for a country or area, since there is an independent source in the international "Freedom House Index" (> <https://freedomhouse.org/report/freedom-world>). Such a context may result in human rights risks that need to be considered when selecting the respective RMMV approaches, tool types, and data sources (e.g., the risk of crowdsourcing citizen feedback in an authoritarian environment); and
- 2) legal and/or regulatory restrictions on the respective RMMV approach or tool type within a given country or area (e.g., the use of drones is restricted in most countries).

If this means that caution (including mitigation measures) is required for a particular institutional approach, tool type, or data source, the box is marked beige. If the context condition is potentially harmful, the box is marked red. This means that the respective institutional approach or tool type is rarely recommendable with a low level of freedom of expression or if legal and/or regulatory restrictions exist.

-  Limitations, but mitigation measures may be applied
-  Severe limitations
-  Not applicable/no obvious limitations

The information drawn from the *Decision Matrix* is by no means complete and has been shortened/summarized to not jeopardize the readability of the matrix. Conclusions drawn from it need to be checked for plausibility and reflected within the specific design of the RMMV institutional approach, tool, or data source, and its respective project context KfW can therefore not be held liable for any use or any conclusions drawn from this *Decision Matrix*, and specific advice should always be sought.

More information on the respective institutional approaches, technical tool types, and data sources can be found in > [Sections 2.1 and > 2.2 of the RMMV Guidebook](#) as well as in the respective > [Technical Tool Type and Data Sources Fact Sheets](#). Additional information on legal and human rights aspects can be found in > [Section 2.3 of the RMMV Guidebook](#).

RMMV Decision Matrix

Selection of suitable institutional RMMV Approaches for your Project

Type of Institutional RMMV Approach	Type of information need		
	Infrastructure quality & project progress incl. use of funds	Target area(s)/target group(s) identification	Target groups' needs & feedback
A1 Increased Responsibility for National KfW Experts <i>(FC default Remote Verification approach)</i>	Always useful; Requires training +	Always useful; Requires training +	Always useful; Requires training +
A2 PEA-led Monitoring: PEA Staff, in most cases supported by an Implementation Consultant <i>(FC default institutional monitoring setup)</i>	In the absence of international consultant staff, simple milestone-based monitoring by local PEA staff with little qualification +	PEA can conduct ad-hoc surveys but may lack incentive to report. Teams need to be diverse, speaking local languages and require training to collect feedback inclusively + -	PEA can conduct ad-hoc surveys and collect local data regularly but may lack incentive to report. Teams need to be diverse, speaking local languages and require training to collect feedback inclusively + -
A3 Consultant-led Monitoring: Consultant with Increased Local Capacities <i>(Alternative institutional monitoring setup to A2)</i>	In the absence of international consultant staff e.g., site supervision by regional/local engineer (risk of inadequate technical capacity) +	Assign local consultant for e.g., context and needs analysis in project region/risk of inadequate assessment capacities/risk of bias. Teams need to be diverse, speaking local languages and require training to collect feedback inclusively +	Assign local consultant for e.g., context and needs analysis in project region/risk of inadequate assessment capacities/risk of bias. Teams need to be diverse, speaking local languages and require training to collect feedback inclusively +
A4 Third-Party Monitoring or Verification <i>(in addition to other institutional approaches)</i>	Main types: – Third-Party Monitoring visits project sites. – Technical audit as part of financial audit +	Third-Party Monitoring visits project sites. TPM team needs to be diverse and speaking local languages to collect feedback inclusively +	Third-Party Monitoring collects data locally. TPM team needs to be diverse and speaking local languages to collect feedback inclusively +

Project outcomes & impact(s) (incl. usage)	Environmentally & socially adverse impacts & risks	Context conditions making use of approach difficult or impossible	
		Low-level freedom of expression (e.g., according to Freedom House Index)	Challenging legal or regulatory conditions
Always useful; Requires training +	Always useful; Requires training, tools/checklists and briefing upfront site visit; for all projects backstopping needed from KfW E&S experts +		
PEA can conduct ad-hoc surveys and collect local data regularly but may lack incentive to report. Teams need to be diverse, speaking local languages and require training to collect feedback inclusively + -	Good for capacity development: PEA can collect data for internal monitoring but might need training and tools. Not applicable for external verification purposes (e.g., on resettlement implementation), but data provision and progress data from PEA possible). PEA staff may lack incentive to report + -	PEA may have conflict of interest in publishing monitoring data ▲	
Assign local consultant e.g., to collect additional data (EPE)/risk of risk of inadequate assessment capacities/risk of bias. Teams need to be diverse, speaking local languages and require training to collect feedback inclusively +	Useful and often applied approach. Arrangements for solid backstopping services incl. Quality Assurance/Quality Control, capacity development, adapted reporting/monitoring with consultant team needed. PEA mgt. may have conflict of interest collaborating with local consultant staff + -	PEA mgt. may have conflict of interest collaborating with local consultant staff ▲	
PEA may have conflict of interest collaborating with TPM. TPM team needs to be diverse and speaking local languages to collect feedback inclusively + -	PEA may have conflict of interest collaborating with TPM. TPM team needs to be diverse and speaking local languages to collect feedback inclusively + -	PEA may have conflict of interest collaborating with TPM ▲	

RMMV Decision Matrix

Selection of suitable institutional RMMV Approaches for your Project

Type of Institutional RMMV Approach	Type of information need		
	Infrastructure quality & project progress incl. use of funds	Target area(s)/target group(s) identification	Target groups' needs & feedback
A5 Involving Target Groups and PAP (in addition to other institutional approaches)	Main types: – Virtual Focus Group Discussions – PRA/CBPR/PAR – Traditional local decision-making and conflict solution bodies Citizen monitors (different ages and genders) – Community based monitoring (context dependent) +	Main types: – Participatory community mapping – Participatory rural appraisal (PRA)/CBPR, PAR – fuzzy cognitive maps, social network analysis, topic modeling – Traditional local decision-making and conflict solution bodies – Traditional local decision-making and conflict solution bodies – address disadvantaged groups separately +	Main types: – Virtual Focus Group Discussions – Participatory community mapping – PRA /CBPR, PAR – fuzzy cognitive maps, social network analysis, topic modeling – Traditional local decision-making and conflict solution bodies – address disadvantaged groups separately – Citizen monitors (different ages and genders) – interactive radio shows +
A6 Engaging Other Partners: other government agencies, other donors, research institutes, civil society, media, private sector (In addition to other institutional approaches)	Main types: – peer monitoring, if not too complicated to organize – monitoring by reliable local government institutions, if they exist + -	– Peer monitoring/planning +	– Peer monitoring – monitoring by reliable local government institutions, if no risk of bias/distortion/ lack of capacities +

		Context conditions making use of approach difficult or impossible	
Project outcomes & impact(s) (incl. usage)	Environmentally & socially adverse impacts & risks	Low-level freedom of expression (e.g., according to Freedom House Index)	Challenging legal or regulatory conditions
Main types: – Virtual Focus Group Discussions – Participatory community mapping – PRA/CBPR, PAR – Traditional local decision-making and conflict solution bodies – address disadvantaged groups separately – use participatory statistics – use micro narratives – Citizen monitors (diff. ages and genders) – Community based monitoring (context dependent) +	Main types: – Virtual Focus Group Discussions – Participatory community mapping – PRA/CBPR, PAR – address disadvantaged groups separately – Citizen monitors (different ages and genders) – Community based monitoring (context dependent) – Risk of non-inclusion of vulnerable groups, esp. women and girls – Communication strategy needed for each group +	Human rights risks Traditional local decision-making and conflict solution bodies: Risk that only the most powerful get heard Human rights risks for the citizen monitors ▲	Traditional local decision-making and conflict solution bodies: Potential conflict trad. and formal law, exclusion of groups disadvantaged by trad. law (e.g., women and girls) ▲
– Peer monitoring – monitoring by reliable local government institutions, if no risk of bias/distortion/ lack of capacities +	– Peer monitoring if not too complicated to organize – monitoring by reliable local government institutions if no risk of bias/distortion/lack of capacities – In case of potential conflicts of interests: NGOs and CBOs to be included in monitoring – Analysis of incentives and agendas needed +		

Selection of suitable Technical Tool Types and Data Sources for your project

Note: All Tool Types can be used for *Remote Monitoring* and *Remote Verification*, some Tool Types can also be used for *Remote Management*

Technical Tool Type/ Data Source	Type of information need		
	Infrastructure quality & project progress incl. use of funds	Target area(s)/ target groups identification	Target group needs and feedback
(Remote) Management Information Systems (R/MIS)	Useful for complex projects and many sites 	Usually target areas and group types are already defined before tool is set up 	Risk of biased data collection: monitoring agents require training to collect feedback inclusively
Maintenance Management Systems (MMS)	Useful, if already installed before the end of construction/ implementation. 	Not useful	Useful, if it includes a user-feedback application (e.g., to report broken installation)
Mobile Data Collection (MDC) Tools (often part of R/MIS and MMS)	Especially useful for many sites 	Risk of biased data collection: monitoring agents need to be diverse, speaking local languages and require training to collect feedback inclusively 	Useful, but risk of biased data collection: monitoring agents need to be diverse, speaking local languages and require training to collect feedback inclusively
Crowdsourcing Tools (e.g., citizen feedback, complaints mechanisms)	Useful, if many project implementing partners/staff or if target groups/users can provide useful feedback/ideas. 	Potentially useful for brainstorming, but high risk of bias towards tool users (digital divide) 	Potentially useful for expression of needs/feedback, but risk of bias towards tool users (language, (digital) literacy, access)

		Context conditions making use of tool type difficult or impossible	
Project outcomes and impact (incl. usage)	Environmental and social adverse impacts and risks	Low-level freedom of expression (e.g., according to Freedom House Index)	Challenging legal or regulatory conditions
Ideally, the R/MIS workflow connects project activity data to outcome/impact data 	Ideally, the R/MIS workflow connects project activity data to E&S risks & impact data 	Check for human rights risks Data protection: Wherever possible, the collection of personal data should be avoided. Data security must be warranted 	Data security and privacy laws: – Data protection: Wherever possible, the collection of personal data should be avoided. – Data security must be warranted
Ideally, the MMS workflow aggregates maintenance data to related outcome/impact data 	Not useful	Data protection: Wherever possible, the collection of personal data should be avoided. Data security must be warranted 	Data security and privacy laws: – Data protection: Wherever possible, the collection of personal data should be avoided. – Data security must be warranted
Often during final inspection/ex-post evaluation, but risk of biased data collection: monitoring agents need to be diverse, speaking local languages and require training to collect feedback inclusively 	GSM-based surveys of certain stakeholder groups are a very useful tool and widely used in the private sector (e.g., worker surveys on working conditions etc.) Risk of biased data collection: monitoring agents need to be diverse, speaking local languages and require training to collect feedback inclusively. Data protection may be an issue 	Check for human rights risks Data protection: Wherever possible, the collection of personal data should be avoided Security of the collected data must be warranted 	Local legal requirements can restrict collecting project-related data with mobile data collection tools, e.g., photographing certain types of infrastructure Data security and privacy laws: – Data protection: Wherever possible, the collection of personal data should be avoided. – Security of the collected data must be warranted
Potentially useful for expression of level of satisfaction, but risk of bias towards tool users (language, (digital) literacy, access) 	Potentially useful for complaints mechanism, but risk of bias towards tool users (language, (digital) literacy, access) 	Human rights risks: – Local legal requirements can restrict collecting project-related data with crowdsourcing tool – Data protection: Wherever possible, the collection of personal data should be avoided (e.g., through anonymization) – Security of the collected data must be warranted 	Data security and privacy laws: – Data protection: Wherever possible, the collection of personal data should be avoided. – Security of the collected data must be warranted. – In case social media are being used, the future deletion of the content incl. any personal data, must be ensured

Selection of suitable Technical Tool Types and Data Sources for your project

Note: All Tool Types can be used for *Remote Monitoring* and *Remote Verification*, some Tool Types can also be used for *Remote Management*

Technical Tool Type/ Data Source	Type of information need		
	Infrastructure quality & project progress incl. use of funds	Target area(s)/ target groups identification	Target group needs and feedback
Cameras	<p>For in-door work, on-site inspections with very high detail information.</p> <p>Monitoring agents require training to take useful photos</p> <p>+</p>	Not useful	Not useful
Drones/UAV (Airborne Observation)	<p>Possible, but usually not cost-effective</p> <p>(Exception: very high detail resolution 10-30 cm required)</p>	<p>Comparing planned sites with drone data for extended areas/ low population density, if satellite data is not sufficient airborne photography for areas > 100 sqm, but few providers; rel. expensive</p> <p>+</p>	Not useful

		Context conditions making use of tool type difficult or impossible	
Project outcomes and impact (incl. usage)	Environmental and social adverse impacts and risks	Low-level freedom of expression (e.g., according to Freedom House Index)	Challenging legal or regulatory conditions
<p>Comparison ex ante and ex post situation, pure retrospective analyses difficult.</p> <p>Monitoring agents require training to take useful photos</p> <p>+ -</p>	<p>Useful for site visits; interviews with project-affected persons (PAP) (e.g., cell phone livestream)</p> <p>For details, better than UAV/ drones and useful for ground truthing. Difference btw livestream or camera surveillance (e.g., on construction areas) needed. Potential security risks for camera operators in volatile settings; privacy and prevalent cultural norms in project setting may inhibit use of cameras for certain monitoring aspects (e. g. in a community setting)</p> <p>Only small area covered, risk of biased data collection: monitoring agents require training to take useful photos</p> <p>+</p>	<p>Camera surveillance can be an invasion of personal privacy (as for UAV/drones/ airborne.</p> <p>Avoid taking photos or videos depicting individuals also if captured automatically.</p> <p>Images/videos could be used against individuals or group(s) of people who are especially vulnerable to human rights abuse (e.g., ethnic minorities)</p> <p>▲</p>	<p>Camera surveillance (by PEA) might be restricted.</p> <p>Potential access constraints to sites (such as critical infrastructure)</p> <p>▲</p>
<p>Comparison ex-ante and ex-post outcomes/impacts for extended areas /low population density, if satellite data is not sufficient; for very large areas (>100 sq km) airborne photography is more cost-efficient; pure retrospective analyses difficult</p> <p>+</p>	<p>Useful for (virtual) site visits and real-time evaluation</p> <p>Useful as support for various baseline studies</p> <p>Beneficiaries and PAP might need to be informed about drone use.</p> <p>Useful for measuring, e.g., size of resettlement sites (orthophotos); must be close to the object or area (viewing distance), very large areas (>100 sq km) can be lengthy and expensive, and no retrospective analyses possible</p> <p>+</p>	<p>Human rights risks: Drone images could be used against Images/ videos could be used against individuals or groups of people who are especially vulnerable to human rights abuse (e.g., ethnic minorities)</p> <p>Drones may create fear (chilling effect), especially in conflict areas or areas where drones are unknown</p> <p>⚡</p>	<p>National UAV/drone regulations may not allow or severely restrict the use of UAV/drones, check third-party insurance, emission, and import regulations; there may be UAV/drone restrictions in certain areas, such as critical infrastructure. Check how the inadvertent collection of personal data by UAV/drones can be avoided or minimized</p> <p>▲</p>

Selection of suitable Technical Tool Types and Data Sources for your project

Note: All Tool Types can be used for *Remote Monitoring* and *Remote Verification*, some Tool Types can also be used for *Remote Management*

Technical Tool Type/ Data Source	Type of information need		
	Infrastructure quality & project progress incl. use of funds	Target area(s)/ target groups identification	Target group needs and feedback
Earth Observation via Satellites	Possible, but usually not cost-effective, because mostly, commercial data is required (recent data, very high resolution (30cm-1m), etc.)	Comparing planned sites with satellite and Geographic Information System (GIS) data +	Not useful
Geospatial Tools/Geographic Information Systems (GIS)	Comparing the status of many project sites on a map +	Comparing planned sites with external geographical data +	Not useful for planning, but potentially useful for visualization of impacts
Sensors/Smart meters (Internet-of-Things)	Useful, if installed before the end of the implementation +	Not useful	Not useful
Building Information Modeling (BIM)	For technically complex projects with many implementing partners +	Not useful	Not useful

		Context conditions making use of tool type difficult or impossible	
Project outcomes and impact (incl. usage)	Environmental and social adverse impacts and risks	Low-level freedom of expression (e.g., according to Freedom House Index)	Challenging legal or regulatory conditions
Comparing baseline and impact satellite data is almost always useful: public high-resolution data (1m-30m) mostly cost-free, very large areas, retrospective and repetitive analysis possible +	Useful especially in combination with GIS. Various application possibilities, e.g., for assessing right of way, resettlement census, the progress of establishment of resettlement sites (PAPs), land use and land-use changes, biodiversity offsets (e.g., afforestation as a compensation measure), etc. Frequencies of flyovers may limit real-time follow-ups. Problems for optical systems in areas with heavy cloud cover (equatorial) +	Human rights risks: High-resolution satellite images could be used against individuals or groups of people who are especially vulnerable to human rights abuse (e.g., ethnic minorities) ⚡	High-resolution satellite images (finer than 0.31 m can make a person visually exposed, resulting in an invasion of personal privacy. Check how the inadvertent collection of personal data can be avoided, for instance by choosing a lower resolution of the images or blurring individuals visible in the images. Data protection and privacy impact assessments are recommended ▲
Comparing outcomes/impacts of many project sites on a map +	Comparing E&S impacts & risks of (many) project sites on a map, many applications e.g., deforestation, population influx, resettlement, environmental degradation, etc. Visualization of impacts +	Human rights risks detailed maps could be used against individuals or groups of people who are especially vulnerable to human rights abuse (e.g., ethnic minorities). Security of exact geographic data needs to be contractually ensured by all other external providers and users ⚡	Avoid the (inadvertent) collection of personal data. Ensure security of the GIS data. Use open-source GIS if possible. Secure intellectual property rights for using the GIS information ▲
Useful for measuring usage/operation/generation/production etc. +	Useful for various measurements/monitoring, e.g., flow data of river. Useful in low-bandwidth countries and sites that are not easily accessible. Level, flow, or pressure sensors can be useful, or photo/audio traps for wildlife assessments and monitoring impacts and risks related to usage/operation/ generation/production, etc. +	N/A	Privacy laws are only applicable if personal data (such as names of individuals) are attributed to the data ▲
Not useful	Not useful	N/A	N/A

Selection of suitable Technical Tool Types and Data Sources for your project

Note: All Tool Types can be used for *Remote Monitoring* and *Remote Verification*, some Tool Types can also be used for *Remote Management*

Technical Tool Type/ Data Source	Type of information need		
	Infrastructure quality & project progress incl. use of funds	Target area(s)/ target groups identification	Target group needs and feedback
Collaboration Tools (e.g., video conferencing, digital whiteboards, TruBudget)	Project team collaboration +	Not useful	Virtual focus group discussions Risk of exclusion/further marginalization of groups without access +
eLearning Tools	Useful, if implementing staff/contractors need training +	Not useful	Useful, if target groups need training to provide feedback +
Data Sources: Open Data and Public Media	Not useful	Always useful for project planning +	Secondary data might support needs analysis +
Data Sources: Big Data (e.g., cell-phone user movements)	Not useful	Potentially useful for humanitarian planning, but potential bias toward cell-phone users + -	Not useful

		Context conditions making use of tool type difficult or impossible	
Project outcomes and impact (incl. usage)	Environmental and social adverse impacts and risks	Low-level freedom of expression (e.g., according to Freedom House Index)	Challenging legal or regulatory conditions
Virtual focus group discussions Risk of exclusion/further marginalization of groups without access +	Project team collaboration Virtual focus group discussions Technically challenging in some regions Risk of exclusion/further marginalization of groups without access Good add-on for traditional methods +	Potentially reduced credibility if participants do not dare to speak openly; potentially prohibited by national regulations or informal rules ▲	Check if the use of the planned tool type is restricted in the target area/country. Check ownership of the data shared via the tool and the terms of their use. The tool must have adequate security to protect personal data ▲
Useful, if the monitoring and evaluation (M&E) team/staff need training for assessments +	Useful for various E&S capacity development activities, e.g., training for financial institution (FI) staff, PEA staff, or as a blended learning approach for sub-consultants trained by international consultants +	N/A	Data security and privacy laws: – The personal data of the students must only be collected and processed to the extent necessary for the training purpose. – Security of the collected data must be warranted ▲
Comparing baseline and impact project data with external data sources is always useful. +	Comparing baseline E&S risk & impact project data with external data sources is always useful if relevant and reliable sources exist. Media monitoring: Assessment of project-relevant news to support E&S due diligence and risk reporting, as well as project management and monitoring/reporting, e.g., Google Alerts with specific keywords (incidents, protests, drought, flooding, etc.); Newspaper, TV, radio channels; specialized search engines like Prewave or Bankwatch +	N/A	N/A
Potential bias toward cell-phone users + -	Potentially useful, e.g., regarding reputational risks one can set up lists with names of organizations to be monitored. This can be quite helpful for financial institutions (FI), media monitoring (participation in dodgy deals), and possibly for larger direct investment in conflict settings. Potential data protection issues + -	Human rights risks: Potential risks of monitoring user movements in conflict or of triangulating information using big data and/ or other data sources to identify and target PAP negatively affecting them ⚡	Data security and privacy laws: – Wherever possible, the collection of personal data should be avoided. – Security of the collected data must be warranted ▲



KfW

© 2022 KfW Development Bank

Palmengartenstrasse 5–9
60325 Frankfurt am Main, Germany

Phone: +49 69 7431 0
Fax: +49 69 7431 2944

This work is a product of the staff of KfW Development Bank with external contributions. The findings, interpretations, and conclusions expressed in this work do not necessarily reflect the views of KfW Development Bank, its Board of Executive Directors, or the governments they represent.

KfW Development Bank does not guarantee the accuracy of the data included in this work. The boundaries, colors, denominations, and other information shown on any map in this work do not imply any judgment on the part of KfW Development Bank concerning the legal status of any territory or the endorsement or acceptance of such boundaries.

As of September 2022

Supported by the



Federal Ministry
for Economic Cooperation
and Development