

Overview of the Malaria Surveillance Assessment Toolkit

Focus on the elimination module



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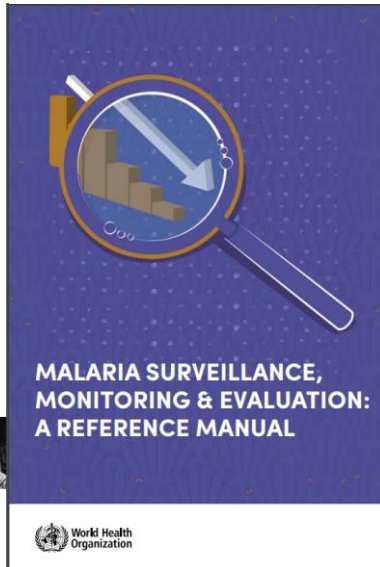
Global **Malaria** Programme



World Health
Organization



GLOBAL TECHNICAL
STRATEGY FOR
MALARIA 2016–2030



MALARIA SURVEILLANCE,
MONITORING & EVALUATION:
A REFERENCE MANUAL



Surveillance systems should be able to

- Accurately capture cases and deaths
- Collect clinical and sociodemographic data on cases and deaths
- Monitor implementation of interventions
- Low transmission: trigger a locally tailored response to every infection
- Detect outbreaks
- Provide robust data for strategic and operational planning

Why?

- Burden measurement and estimation
- Monitor trends/indicators over time and by geography to understand epidemiology, programme performance and target interventions
- Programme performance and measuring impact of interventions
- Rapidly diagnose and treat cases and prevent transmission
- Target resources effectively and prevent transmission
- National strategic planning and funding

Surveillance assessments required to

- Assess whether systems meet these requirements and detect weaknesses and gaps
- *In elimination settings; Prepare documentation and check quality of data prior to certification*
- Evidence-based and prioritized recommendations for surveillance system strengthening
- Ensure surveillance activities are funded

What is a malaria surveillance assessment?



What

A systematic approach to measuring the performance of malaria surveillance systems, and identifying and evaluating the determinants of that performance.

Where

All malaria endemic countries should carry out a surveillance system assessment.
In elimination settings recommended when there are fewer than 100 cases and in three years of reporting zero cases.

Who

Implemented by **national malaria programmes** and partners interested in malaria surveillance strengthening.

When

Undertaken at any time but recommended as part of key NMP planning milestones such as a Malaria Programme Review (MPR) and National Strategic Plan (NSP) development. In elimination settings prior to certification and as part of the assessment for whether a programme is in place to prevent re-establishment.

Why

To provide actionable and prioritized recommendations on how to strengthen surveillance systems for malaria control and elimination

What is the malaria surveillance Toolkit?



A standardized Malaria Surveillance Assessment Toolkit was developed to conduct comparable and replicable malaria surveillance assessments across multiple countries and within the same country over time.

Adaptable assessment framework:

- User can define the **assessment scope** by
1. choosing the case surveillance (burden reduction or elimination) and malaria control strategies implemented in country
 2. the indicators to be included in the assessment (indicators specific to elimination)



Standardized package of tools:

All malaria surveillance assessments conducted using the Toolkit will include a **minimum set of priority indicators** and **generate common and consistent expected outputs.**

Define the scope of the assessment?



Malaria surveillance strategies

Case surveillance

Burden reduction and/or elimination settings

Intervention implementation surveillance

Chemoprevention: IPTp, IPTi, SMC, MDA

Vector control: ITNs distributed through routine channels and/or mass campaigns, IRS and larval control

Other surveillance

Commodity tracking

Entomological surveillance

Drug resistance surveillance

Other genomic surveillance (pfhrp 2/3 gene deletions)



Assessment Framework

Select indicators based on case surveillance setting

Review and select indicators based on interest/country context or priority/optional

Priority indicators for other strategies automatically selected. The goal of an assessment of these strategies is to understand what information is collected and how, and if it is integrated and used along with case surveillance data. The toolkit does not include data quality assessments for these surveillance strategies.



- The elimination module should be selected in countries with sub-national elimination goals
- Case investigations and foci investigations should be activities that are routinely implemented and should be carried out for the majority of cases
- An assessment can be done nationally or as part of a sub-national verification process. The assessment can be implemented at a sub-national level (e.g provincial). The burden reduction module could be used on the rest of the country in this situation.
- The MEAT tool which assesses all aspects of an elimination programme at a higher level should be carried out annually. This tool identifies key components of a malaria elimination strategy, elements of a plan to prevent re-establishment and the documentation required for certification. The results from this tool should be used to determine whether the country is ready for an in-depth review of the surveillance system which includes a data quality assessment.

What is the assessment framework of the Toolkit?



Desired functions of surveillance

1: Performance

Objective 1: Measure the **performance of the surveillance system**, which is defined by surveillance system coverage, data quality (completeness, timeliness and concordance and consistency) and data use



Determinants of surveillance

2: Context and infrastructure

Objective 2: Describe and evaluate **contextual and infrastructural aspects** of the surveillance that may influence performance. This includes an assessment of health sectors reporting, if minimum data is captured by each surveillance strategy, detail on information systems used, available documentation and guidelines and whether guidelines are adhered to, human and financial resources and partner support, and infrastructure.



3: Process and technology

Objective 3: Describe and evaluate **process and technical aspects** of the surveillance system that may influence performance. This includes an assessment of processes, tools and personnel involved with the flow of data from recording to response.



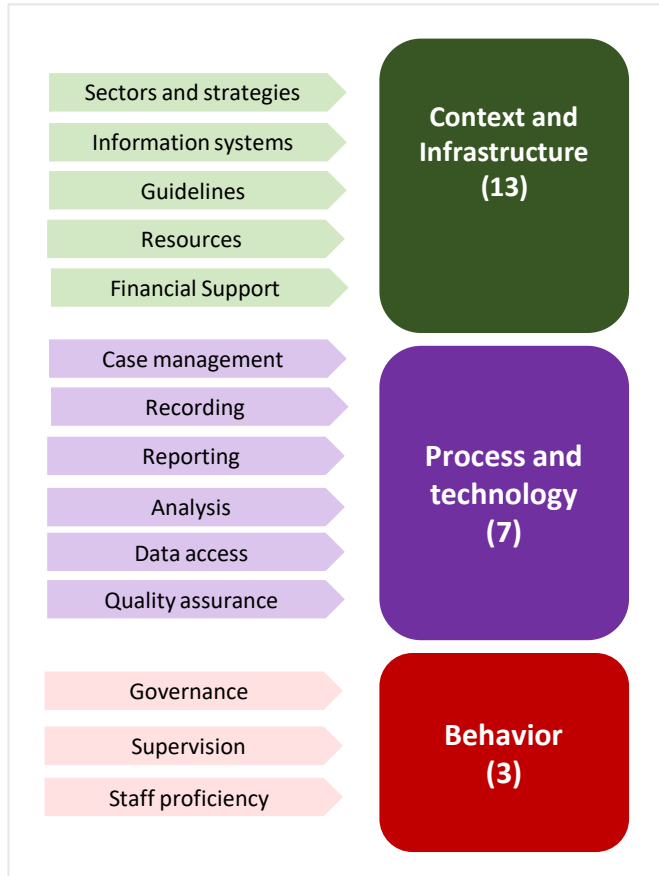
4: Behavior

Objective 4: Describe and evaluate **behavioral aspects** of the surveillance system that may influence performance. This includes an assessment governance structures in place and the promotion of an information culture, as well as proficiency, motivation and accountability of staff involved in malaria surveillance within a country.

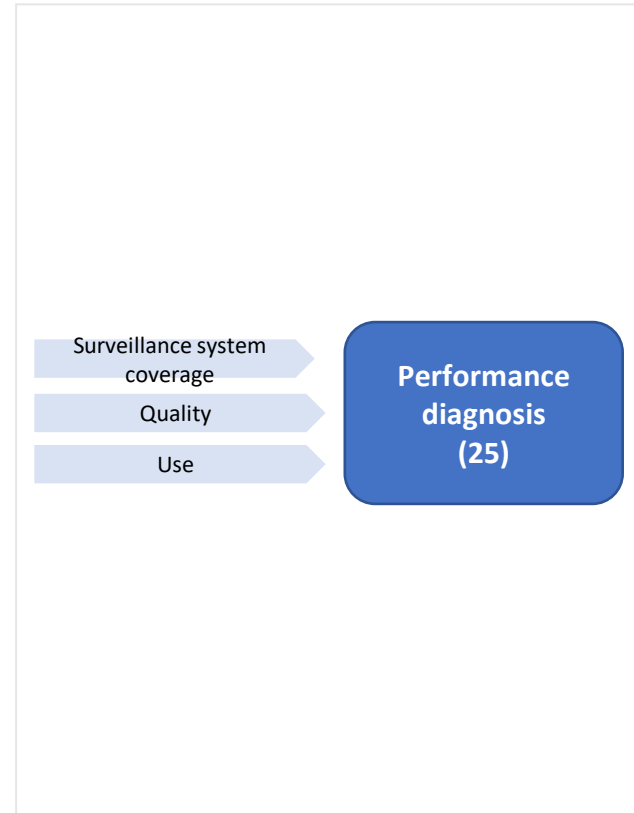
Sub-objectives and indicators in elimination settings



Determinants/ Inputs



Performance/ Outputs



Total priority indicators= 48

How is an assessment implemented using the Toolkit?



There are 3 potential approaches for carrying out a surveillance system assessment

	Rapid	Tailored	Comprehensive
Scope	Only <i>priority indicators</i> from all four objectives for case surveillance and all other malaria control strategies implemented in country	<i>Priority indicators + user selected optional indicators of interest</i> from the four objectives for case surveillance and <i>priority indicators</i> for all malaria control strategies implemented in country	<i>All indicators</i> from all four objectives for case surveillance and <i>priority indicators</i> for all malaria control strategies implemented in country
Methods	Primarily limited to desk review only with few essential site visits	Desk review and surveys at different levels of the health systems (i.e., national, subnational, a sample of facilities and community healthcare workers)	Desk review and surveys at different levels of the health systems (i.e., national, subnational, a sample of facilities and community healthcare workers)
Access	Ready-to-use tool within the Toolkit that can be downloaded	Data collection tools are customized then downloaded	Data collection tools are customized then downloaded
Estimated resource requirement	Low; 2-4 weeks	Medium/High; up to 12 months	Medium/High; up to 12 months
Suggested frequency	Once every 3-5 years in line with the MPR and NSP development Annual in elimination settings	Once every 3-5 years in line with the MPR and NSP development Annual in elimination settings	Once every 3-5 years in line with the MPR and NSP Annual in elimination settings

What is the methodology of an



A surveillance assessment conducted using the toolkit has two methods of data collection: Desk review and a Survey.

Data collection method	Implementation level	Tools	Process
Desk review	National	Desk level tool	Compile documents and data at the national level to review and describe surveillance system(s). Conduct key informant interviews at national and subnational levels where appropriate.
		DQA desk level tool and DHIS2 dashboard	Initial DQA on retrospective data from national surveillance system (s)
Survey	Service delivery	Question bank	Carry out interviews using questionnaires for each unit/level to be surveyed
		DQA service delivery level tool	Primary data collection from registers and compare with aggregate reports from the national/subnational level (s)

Data quality



Data Extraction Form for a Malaria Elimination Surveillance System Evaluation

Elements from the national case-based database														District evaluated/<specify name>			agnostic facility/<specify name>		
Patient ID	Last Name	First Name	DOB	Sex	Nationality	Species	Date of symptom onset (dd/mm/yy)	Date of case notification (dd/mm/yy)	Date of diagnosis (dd/mm/yy)	Date of treatment (dd/mm/yy)	Treatment prescribed	Date of case investigation (dd/mm/yy)	Date of focus investigation (dd/mm/yy)	Classification	Diagnosed within the district? (y/n)	Diagnosed within facility? (y/n)	Likely location of infection? (y/n)	Patient found in lab register? (y/n)	Patient notified form (y/n)

Country		Estimated Cases	
Date			

Instructions for completing this tab: Please refer to the national case-based database and summarized here. If the information is not available, please leave blank.

Table 1

Number of cases - 2017-2019		Total	Investigated	Indigenous	Imported*	Introduced	Recurrence	Induced	Others	Not classified
Confirmed cases	Microscopy									
	RDT									
	Unk									
By species										
P. falciparum										
P. vivax										
P. malariae & others										
Mixed (P. falciparum and P. vivax)										
P. knowlesi										

*Only cases imported from OUTSIDE of the country

Table 2

Type of surveillance		2017	2018	2019
Passive case detection	Samples examined			
	Confirmed cases			
Reactive case detection	Samples examined			
	Confirmed cases			
Proactive case detection	Samples examined			
	Confirmed cases			
Active case detection	Samples examined			
	Confirmed cases			

- Line listed data extracted from the National level surveillance system
- Data quality checks; completeness of variables, consistency between variables, consistency over time
- Dashboards of key indicators

Quantitative results from Bhutan



Indicator*	Target	Result	Est. time [#]
Time from symptom onset to health seeking (time from symptom onset to health seeking)	1-2 days	n/a	4.4 days
Timeliness of parasitological diagnosis (time from health seeking to parasitological diagnosis)	Same day	100%	0 days
Timeliness of notification (time from diagnosis to notification)	24 hours	100%	0 days
Timeliness of case investigation (time from diagnosis to case investigation)	3 days	100%	0.9 days
Timeliness of focus investigation (time from diagnosis to focus investigation)	7 days	100%	0.7 days
Proportion of parasitological confirmations ⁺	10%	8.3%	n/a

*Some data were missing; results are calculated according to the information available and the information found on the data collection forms in the field.

[#] Average time calculated for 2017-2019 cases that were reviewed

⁺ Results for 2017 and 2018



Which admin level to carry out the assessment

- Health Facility
- District
- Region/Province

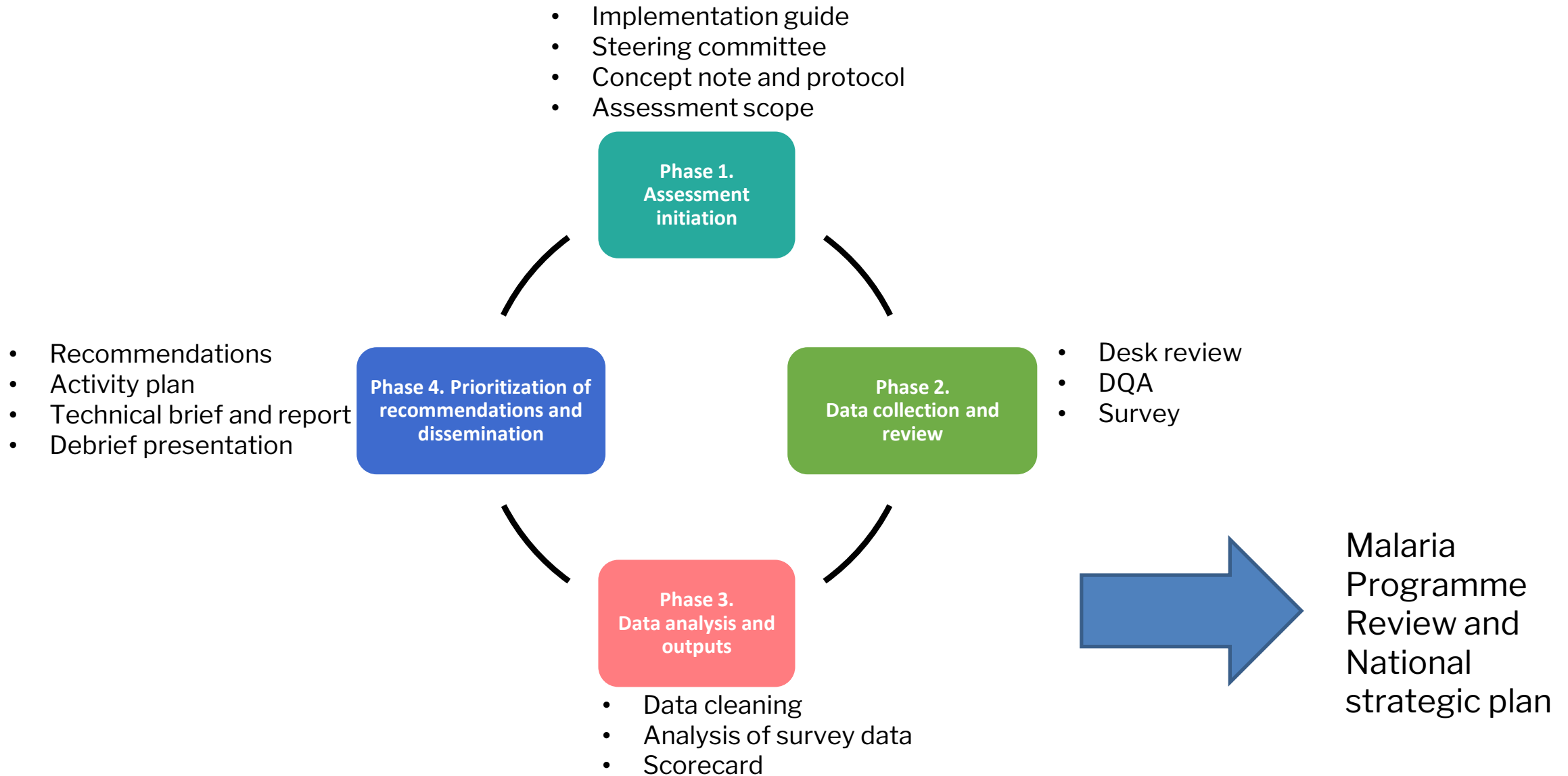
Where to carry out the assessment

- Limited to the following Strata
 - Active foci
 - Residual non-active foci
 - Areas that recently reported malaria cases (last 3 years)
 - Areas with malariogenic potential
 - Non-malarious areas with large referral hospitals reporting cases
 - Areas bordering countries or other geographical areas with high malaria transmission

Which data quality checks

- Completeness of variables in source documents
- Concordance between national surveillance line listed data and outpatient/inpatient registers, laboratory registers/systems, electronic hospital records and case investigation reports
- Quality of data e.g case classification is appropriate

Implementation of a malaria surveillance assessment occurs in four phases



Toolkit pilots and web app development



5 countries carrying out comprehensive assessments

Need to identify countries to pilot the rapid assessment and the toolkit in elimination settings

Excel tools are now available to be shared on the GMP website and downloaded

Approximate release dates

Q2 2021

Q3 2021

Q4 2021

Malaria Surveillance Assessment

Web-app Development - Scope of work

1. Digitalization of the assessment toolkit and ability to download tools in their current format
2. Customization and download of data collection tools based on scope (indicators and strategies to be included)
3. Assessment result input/upload and dashboard generation

Global **Malaria** Programme



Burkina Faso: primary data collection (survey) completed, analysis ongoing



Ghana: primary data collection (survey) to begin March 2021



DRC: primary data collection (survey) to begin Jan 2021



Cameroon: primary data collection (survey) to begin Jan 2021



Benin: primary data collection (survey) to begin March 2021



Features

Interface in English and French

User permissions

Interactive web-app with automated tool content selection and outputs

Maps showing completed assessments

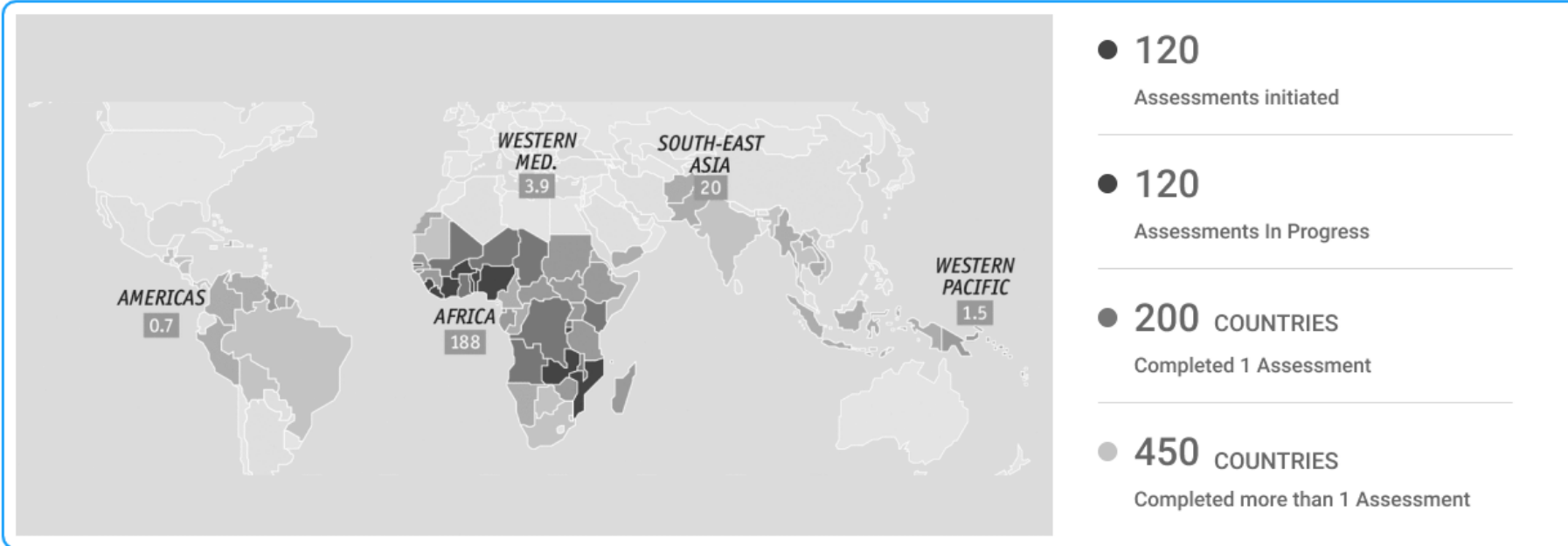
Dashboard with summary results

Global dashboard for country comparison





ASSESSMENTS SUMMARY



TOOLS

DOWNLOAD ALL

Assessment



This is the information about this tool. It is the first step in the application and this is placeholder content only. This is the information about this tool.

Desk Review



This is the information about this tool. It is the first step in the application and this is placeholder content only. This is the information about this tool.

Question Bank



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Data Quality Analysis



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Acknowledge

