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INTEGRATING NATIONAL MRV SYSTEMS:

LINKAGES BETWEEN MRV OF NAMAS, FACILITY- LEVEL REPORTING, AND NATIONAL INVENTORIES

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OVERVIEW OF PRESENTATION

- National MRV systems: GHG inventories, facility level reporting programs, and MRV of NAMAs
- Institutional arrangements for national MRV
- Linkages between national MRV systems and international reporting

NATIONAL MRV SYSTEMS

WHAT IS MRV?

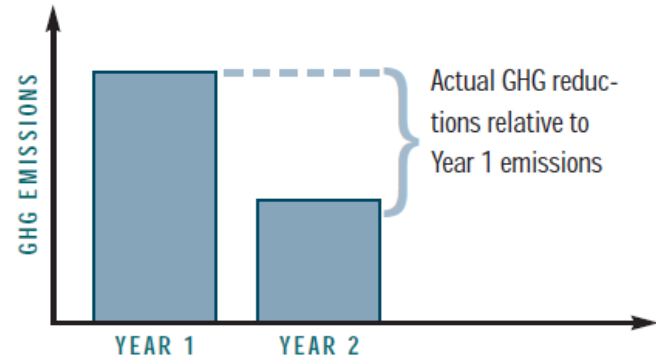
- **Measurement:** direct physical measurement of greenhouse gas (GHG) emissions (e.g., CEMS) or estimation of emissions or emissions reductions based on indicators (activity data X emissions factors)
- **Reporting:** transparent and standardized compilation and public disclosure of measured data
- **Verification:** independent assessment of the accuracy and reliability of reported information

TYPES OF MRV AT THE NATIONAL LEVEL

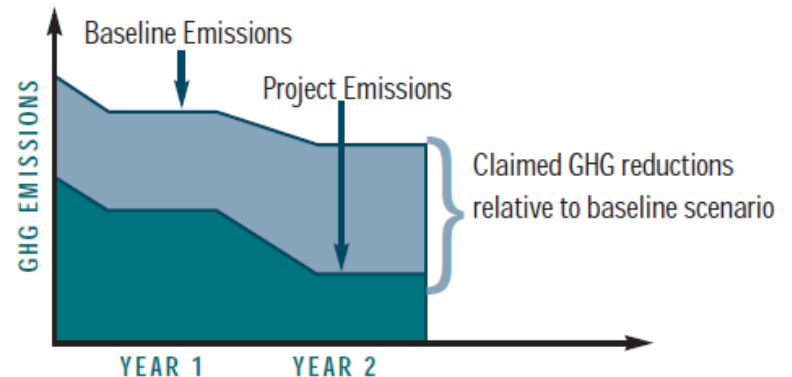
- **MRV of GHG emissions**
 - National inventory
 - Company/organization inventories
 - Facility-level inventories
- **MRV of mitigation actions (e.g., NAMAs) and goals**
 - GHG reduction goals
 - Policies and actions
 - Projects
- **MRV of support**

GHG ACCOUNTING APPROACHES UNDERLYING MRV OF EMISSIONS & MITIGATION ACTIONS

- Inventory accounting: year-on-year emissions tracking
 - National inventory
 - Company/organization
 - Facility



- Intervention accounting: estimating the change in GHG emissions from an intervention
 - NAMAs (projects, policies, actions)



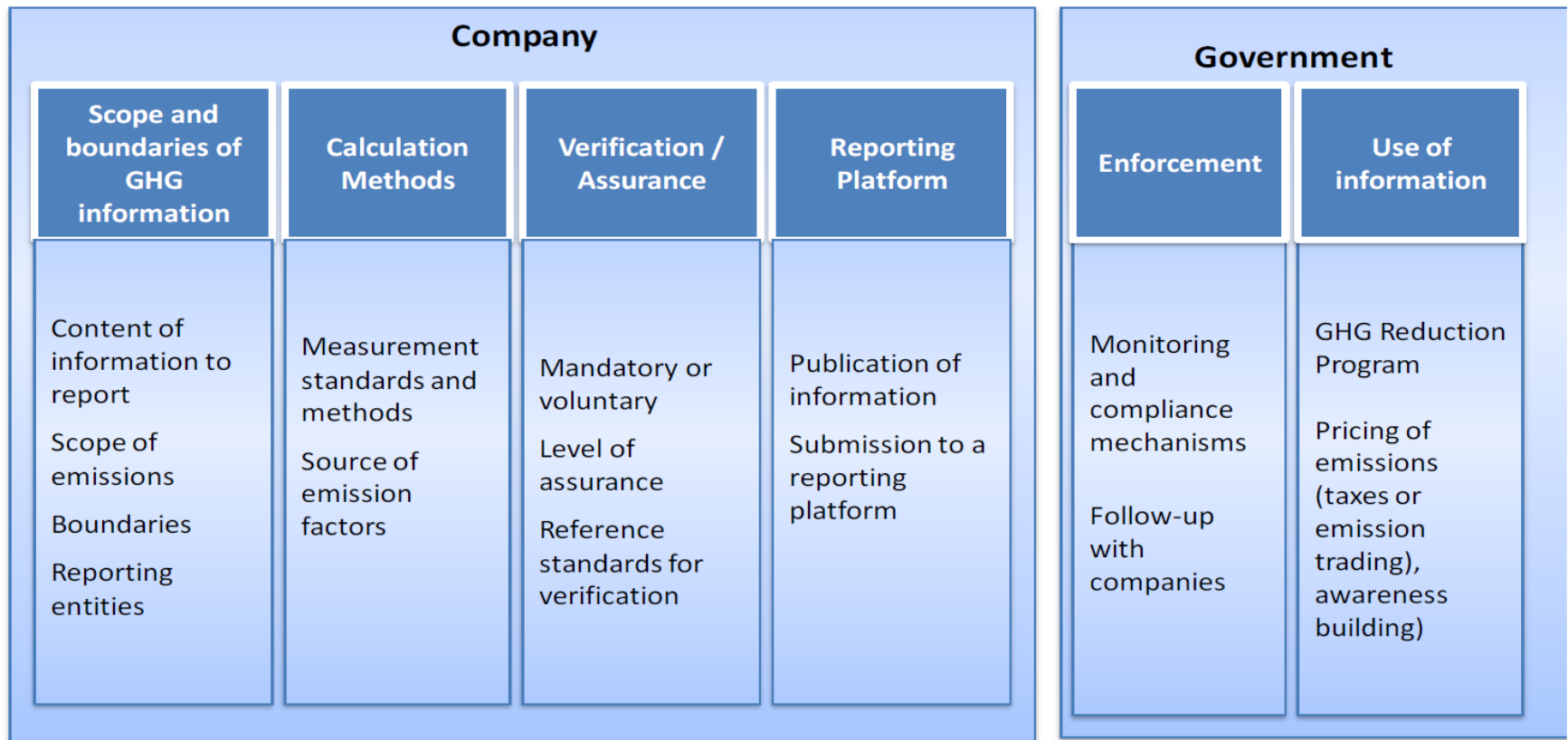
TYPES OF GHG INVENTORIES

Type of inventory	Data	Methods
National	Primarily top-down: Developed using aggregated national data (e.g. national fuel consumption data, national energy data); some sources may also rely on bottom-up approaches	Guidelines provided by the Intergovernmental Panel on Climate Change (IPCC)
Company	Bottom-up: Developed using activity data obtained at a corporate or source level (e.g., utility bills from metered buildings, fuel consumption from individual company-owned vehicles) or direct measurement of emissions	Standards such as the GHG Protocol Corporate Standard and source specific calculation methodologies. Reporting programs may specify calculation methods.
Facility	Bottom-up: Developed using activity data obtained at a facility or source level (e.g., utility bills from metered buildings, fuel consumption from individual company-owned vehicles) or direct measurement of emissions	Source-specific calculation methodologies specified by reporting programs

COMPANY/FACILITY INVENTORY REPORTING PROGRAMS (EXAMPLES)

	Mandatory	Voluntary
Facility-level	<ul style="list-style-type: none"> • California – Mandatory Reporting of GHG Emissions • Canada – GHG Emissions Reporting Program • US – GHG Reporting Program • EU – ETS 	
Company-level	<ul style="list-style-type: none"> • Australia- National GHG and Energy Reporting • France – Bilan d’Emission de GES • Japan - Mandatory GHG Accounting and Reporting System • UK – Carbon Reduction Commitment Program 	<ul style="list-style-type: none"> • Brazil – Programa Brasileiro GHG Protocol • India – India GHG Program • Mexico – Programa GEI Mexico • US – The Climate Registry • Global – CDP

BUILDING BLOCKS FOR COMPANY- AND FACILITY-LEVEL REPORTING PROGRAMS

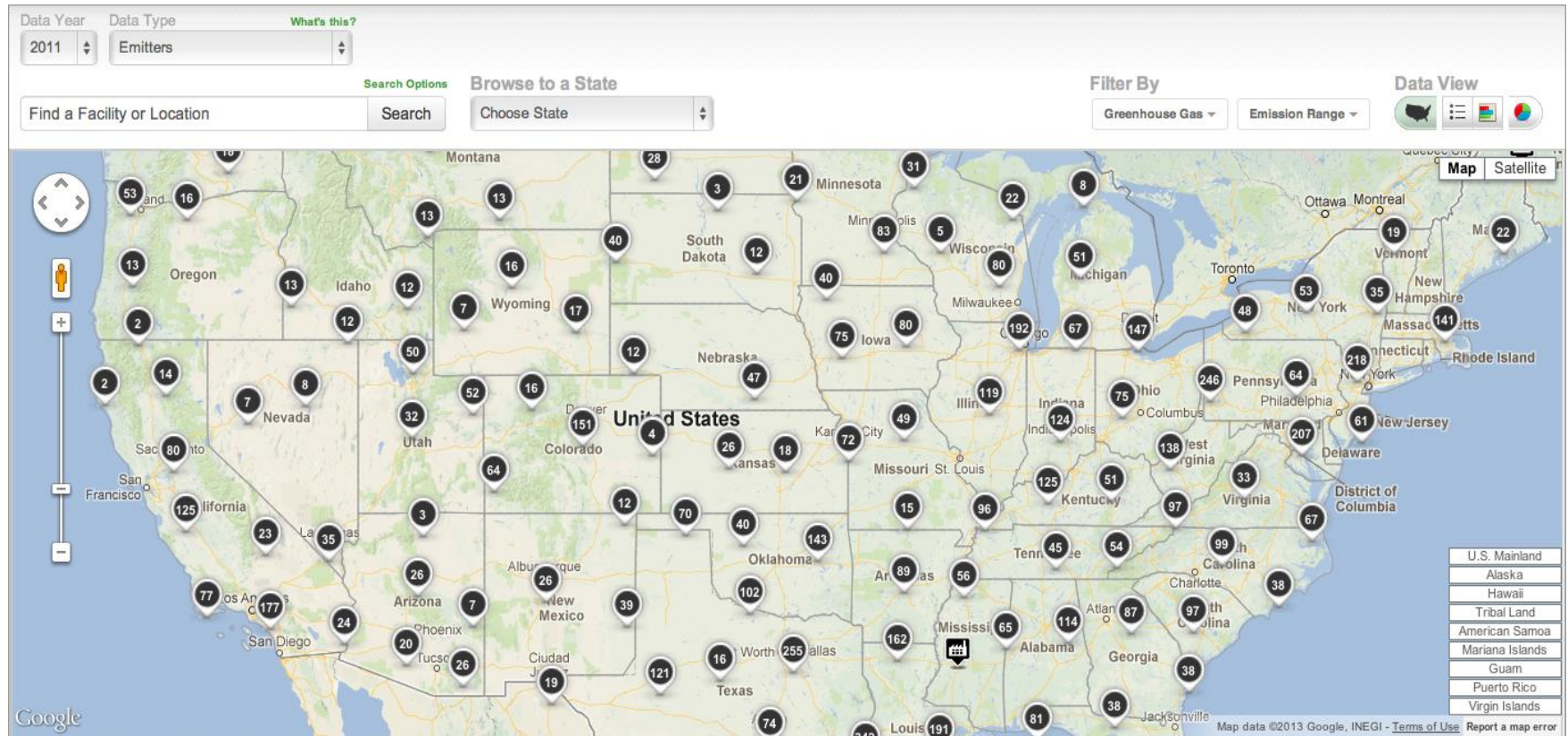


EXAMPLE: US GHG REPORTING PROGRAM

Scheme and date	Legal Framework	Authority	Mandatory / voluntary	Content, scope and boundaries	Calculation methods	Verification/ assurance	Reporting
US Mandatory Reporting of GHG Rule (MRR) 2009	In response to the FY2008 Consolidated Appropriations Act (H.R. 2764; Public Law 110–161), EPA issued the Mandatory Reporting of Greenhouse Gases Rule	EPA	Mandatory	Geographical scope: US Reporting entities: Fossil fuels or industrial GHGs, manufacturers of vehicles and engines, and facilities Content: 6 Kyoto Protocol GHG and HCFCs and other fluorinated gases Boundary: installation Threshold: In general, 25 000 metric tons or more per year of GHG emissions Scope: 1 and 2	Methodology: General Reporting Protocol (GRP)	Optional: Self-certification by designated representative who must certify and submit report (one designated rep per facility and supplier)	Recipient of info: US EPA Platform: EPA website Frequency: Annual

The screenshot shows the EPA e-GGRT web interface. At the top, the EPA logo and navigation tabs (HOME, FACILITY REGISTRATION, FACILITY MANAGEMENT, DATA REPORTING) are visible. The user is logged in as Matt Foley. The main content area is titled 'MF Corporation e-GGRT Greenhouse Gas Data Reporting (2013)'. It includes a 'FACILITY OR SUPPLIER OVERVIEW' section with instructions on how to add reporting sources and submit reports. On the right, there are three data entry fields, each showing a value of 0.0 for CO2 equivalent emissions from facility subparts and suppliers.

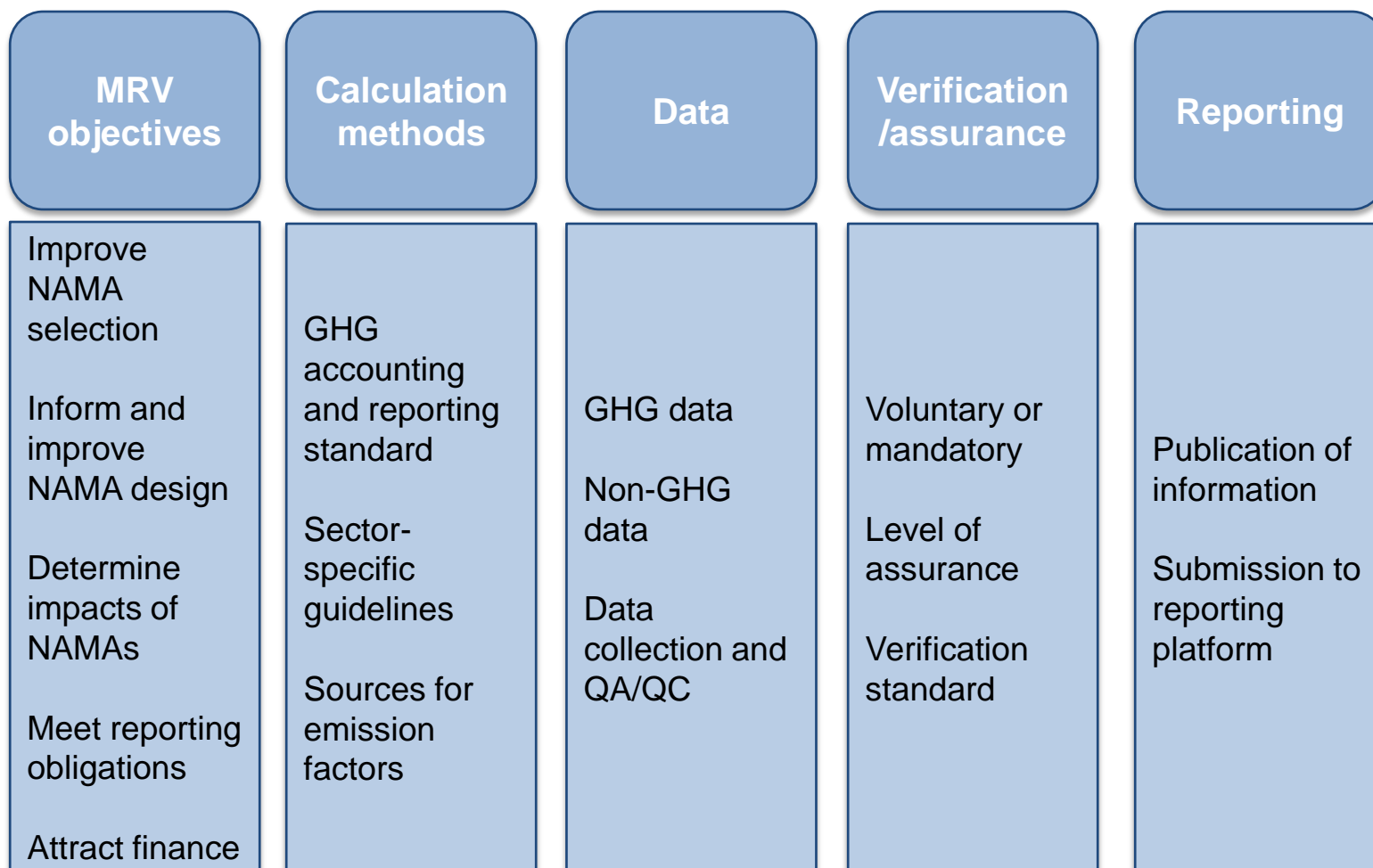
EXAMPLE: US GHG REPORTING PROGRAM



MRV OF NAMAS

Type of NAMA	Description/examples	Applicable methods
Project	Specific activity intended to reduce GHG emissions. Could be stand-alone project or component of larger non-GHG project.	<ul style="list-style-type: none"> • CDM methodologies • GHG Protocol for Project Accounting • Climate Action Reserve methodologies • Verified Carbon Standard • J-MRV Guidelines • JI Guidelines
Policy	Interventions such as laws, regulations and standards; taxes, charges, subsidies and incentives; information instruments; voluntary agreements; implementation of new technologies, processes, or practices; public or private sector financing and investment	<ul style="list-style-type: none"> • GHG Protocol Policy and Action Standard (forthcoming)
Goal	Base year goals, intensity goals, baseline scenario goals and fixed level goals	<ul style="list-style-type: none"> • GHG Protocol Mitigation Goals Standard (forthcoming); Kyoto Protocol accounting rules for Annex I targets

BUILDING BLOCKS FOR MRV OF NAMAS



INTERNATIONAL REPORTING: NC AND BUR

National communication

National greenhouse gas (GHG) inventory

A general description of steps taken or envisaged by the Party to implement the Convention

Any other information that the Party considers relevant to the achievement of the objective of the Convention and suitable for inclusion in its communication

No international reporting requirements for facility-level inventories

Biennial update report

National circumstances and institutional arrangements

National greenhouse gas (GHG) inventory

Information on mitigation actions and their effects

Constraints and gaps, and related financial, technical and capacity needs, including a description of support needed and received

Information on the level of support received to enable the preparation and submission of biennial update reports

Information on domestic MRV

Any other information the Party considers relevant to achieve objectives of the Convention

INTERNATIONAL REPORTING FOR MITIGATION ACTIONS

National communication

Information on mitigation programmes and measures implemented or planned including, as appropriate, relevant information by key sectors on:

- Methodologies
- Scenarios
- Measures
- Results
- Institutional arrangements

Biennial update report

Information on mitigation actions and their effects:

- Name and description of action
- Nature of the action
- Coverage (i.e. sectors and gases)
- Quantitative goals of action
- Progress indicators
- Information on methodologies and assumptions
- Objectives of the action
- Progress of implementation
- Estimated emission reductions
- Information on international market mechanisms

RECOMMENDED INFORMATION TO REPORT FOR POLICY-BASED NAMAS (SUMMARY)

Description of the policy
Title of the policy
Status (planned, adopted, or implemented) and date of implementation and/or completion
Type of policy or action
Geographical coverage of the policy or action
Primary sectors and subsectors targeted
Greenhouse gases targeted
Description of the specific interventions included in the policy or action
Estimated change in GHG emissions and removals resulting from the policy
The estimated change in GHG emissions and removals resulting from the policy or action
The time period over which the GHG effects of the policy are estimated
Methodology
Any standard, guidance, or methodology followed to estimate the GHG effects of the policy (e.g., Greenhouse Gas Protocol Policy and Action Standard (WRI, 2014))
The GHG assessment boundary, included inclusions and exclusions of effects, sources and sinks, and greenhouse gases
A description of the baseline scenario and the policy scenario, and the methodology, assumptions, and data sources used to estimate baseline and policy scenario emissions
The uncertainty of the results (either a quantitative estimate or a qualitative description)
Whether the results were validated/verified, and if so, the validation/verification opinion

INTERNATIONAL REPORTING OF MITIGATION ACTIONS: EXAMPLE FROM UK

The UK's Sixth National Communication and First Biennial Report under the UNFCCC

Annex 2: Table 3

Name of Mitigation Action	Sectors affected	GHG affected	Objective and or activity affected	Type of Instrument	Status of implementation	Brief Description	Start Year of Implementation	Implementing Entity or Entities	Greenhouse Gas Saving (ktCO ₂ eq)						
									2005	2010	2011	2015	2020	2025	2030
Building Regulations Part L 2002, 2006, including 2005 condensing boiler update ¹	Business, Residential, Public	CO ₂ , (CH ₄ , N ₂ O)	Improve energy efficiency of buildings	Regulatory	Implemented	Building Regulations set standards for design and construction, which apply to most new buildings and many alterations to existing buildings. They can also set minimum standards for appliances e.g. boilers.	2002	Department of Energy & Climate Change (DECC)	1,363	5,680	6,793	8,879	10,421	7,992	5,279
Building Regulations Part L 2010 ^{1,2}	Business, Residential, Public	CO ₂ , (CH ₄ , N ₂ O)	Improve energy efficiency of buildings	Regulatory	Implemented	Building Regulations set standards for design and construction, which apply to most new buildings and many alterations to existing buildings. They can also set minimum standards for appliances e.g. boilers.	2010	Department for Communities and Local Government (DCLG)	0	0	0	3,127	5,849	7,246	5,136
National Products Policy (Tranche 1 – Implemented Measures) ^{1,2}	Business, Residential, Public	CO ₂ , (CH ₄ , N ₂ O)	Reducing energy use and emissions from appliances and products such as white goods, lighting, televisions, heating and cooling systems and electric motors by preventing the sale of the worst performing products and promoting the sale of the most efficient.	Regulatory	Implemented	UK legislation to set minimum energy efficiency standards for products on sale. Mandating energy efficiency labelling of appliances. Most recently implemented by the Eco-Design for Energy Related Products Regulations (SI 2010 No 2617). Implements EU Ecodesign Directive 2009/125/EC (amending 2005/32/EC).	2009	Department for Food, Environment and Rural Affairs (DEFRA)	0	621	1,518	4,278	5,043	2,654	227

INTERNATIONAL REPORTING OF MITIGATION ACTIONS: NAMA REGISTRY



Public NAMA • Home

Sign In

Country pages
 NAMAs seeking support for preparation
 NAMAs seeking support for implementation
 Other NAMAs, for recognition
 Information on support
 Supported NAMAs

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NAMAs seeking support

Country	Title	Date Created
Kenya	NAMA for accelerated geothermal electricity development in Kenya	02/21/2014
Mexico	Cogeneration in the Mexican Oil and Gas sector	11/05/2013
Mexico	Emission Reduction Actions Program (NAMA) in Natural Gas Processing, Transport and Distribution System, through fugitive emission reduction	11/01/2013
Dominican Republic	NAMA in Cement/Co-Processing and Waste Sector	10/17/2013
Uruguay	Sustainable production with low-emission technologies in agriculture and agroindustry production chains.	10/14/2013

NAMAs for recognition

Country	Title	Date Created
Uruguay	LNG Terminal with regasification capacity of 10,000,000m ³ /d of natural gas with possible expansion to 15,000,000m ³ /d	10/14/2013
Uruguay	Promotion of renewable energy participation in the Uruguayan primary energy mix	10/14/2013
Chile	Clean Production Agreements in Chile	10/14/2013
Serbia	Construction of New Energy Efficient Buildings Based on Energy Efficiency Regulation in Serbia	10/14/2013

Last updated information on support

Country	Title	Date Created
European Economic Community	Latin American Investment Facility	11/06/2013
European Economic Community	Neighbourhood Investment Facility	11/06/2013
Austria, Belgium, Finland, France, Germany, Greece, Italy, Luxembourg, Netherlands, Portugal, Spain, United Kingdom of Great Britain and Northern Ireland	EU-Africa Infrastructure Trust Fund	11/05/2013
Germany	Climate-related ODA funding	10/14/2013
Germany	International Climate Initiative (IKI)	10/14/2013

Support provided/received

From	Title	To	Date Recorded
No records to display.			

INTERNATIONAL REPORTING OF MITIGATION ACTIONS: EXAMPLE FROM MEXICO

Public NAMA ▶ My Application Page Sign In

NS-68 - Emission Reduction Actions Program (NAMA) in Natural Gas Processing, Transport and Distribution System, through fugitive emission reduction

Mexico

NAMA Seeking Support for Implementation

A Overview

A.1 Party: Mexico

A.2 Title of Mitigation Action: Emission Reduction Actions Program (NAMA) in Natural Gas Processing, Transport and Distribution System, through fugitive emission reduction

A.3 Description of mitigation action: The central goal of this NAMA is the creation of a framework program that allows project activities consisting of the reduction of methane emission by means of the minimization and/or elimination of fugitive and black carbon emissions in the components of the process, transport and distribution of the national natural gas system.

A.4 Sector:

- Energy supply
- Residential and Commercial buildings
- Agriculture
- Waste management
- Other
- Transport and its Infrastructure
- Industry
- Forestry

A.5 Technology:

- Bioenergy
- Energy Efficiency
- Hydropower
- Wind energy
- Carbon Capture and Storage
- Land fill gas collection
- Other: Fugitive emissions and black carbon reduction
- Cleaner Fuels
- Geothermal energy
- Solar energy
- Ocean energy
- Low till / No till

A.6 Type of action:

- National/ Sectoral goal
- Strategy
- National/Sectoral policy or program
- Project: Investment in machinery
- Project: Investment in infrastructure
- Project: Other

INVENTORY ACCOUNTING VS NAMA ACCOUNTING

Type of accounting	Advantages	Disadvantages
Inventory accounting	<ul style="list-style-type: none">• Comprehensive accounting of overall emissions• Necessary to track overall progress and progress toward GHG reduction goals	<ul style="list-style-type: none">• Does not explain why emissions change over time; changes in emissions are a result of NAMAs as well as external factors (e.g., changes in GDP, energy prices, weather, etc.)• Does not enable an understanding of NAMA effectiveness
NAMA accounting	<ul style="list-style-type: none">• Attributes specific changes in emissions to specific NAMAs to inform policy development and understand NAMA effectiveness	<ul style="list-style-type: none">• Not comprehensive; overall emissions may increase even if individual NAMAs are reducing emissions (compared to a baseline scenario)

INSTITUTIONAL ARRANGEMENTS FOR NATIONAL MRV

KEY COMPONENTS OF NATIONAL MRV SYSTEM

GHG accounting methods

- Standards
- Country-specific guidelines
- Sector-specific guidelines

Emission factor database

Verification procedures

Institutional arrangements

Capacity: Human, technical, financial, and institutional

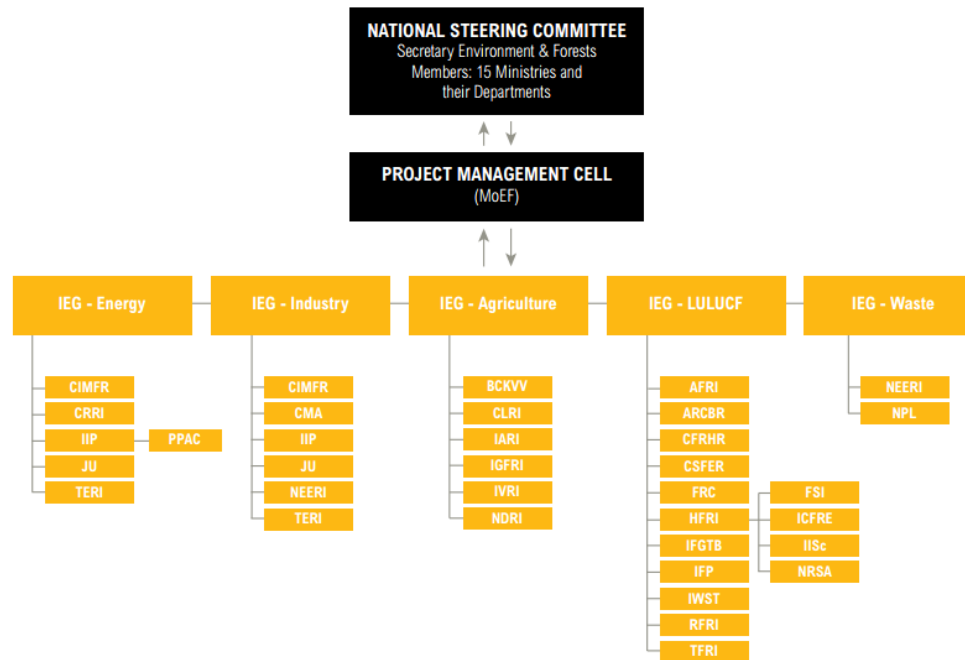
NEED FOR NATIONAL MRV INSTITUTIONS

- Robust institutional arrangements can:
 - Formalize system for data collection and QA/QC
 - Build in-country institutional and technical capacity
 - Ensure institutional memory and long-term sustainability of MRV processes
 - Meet reporting requirements under UNFCCC

KEY INSTITUTIONAL FUNCTIONS FOR NATIONAL MRV

- Designated lead MRV institution
- Clear roles and responsibilities for relevant institutions – governmental and non-governmental
- Mandates for data collection – MOUs and legal mandates
- Data archiving

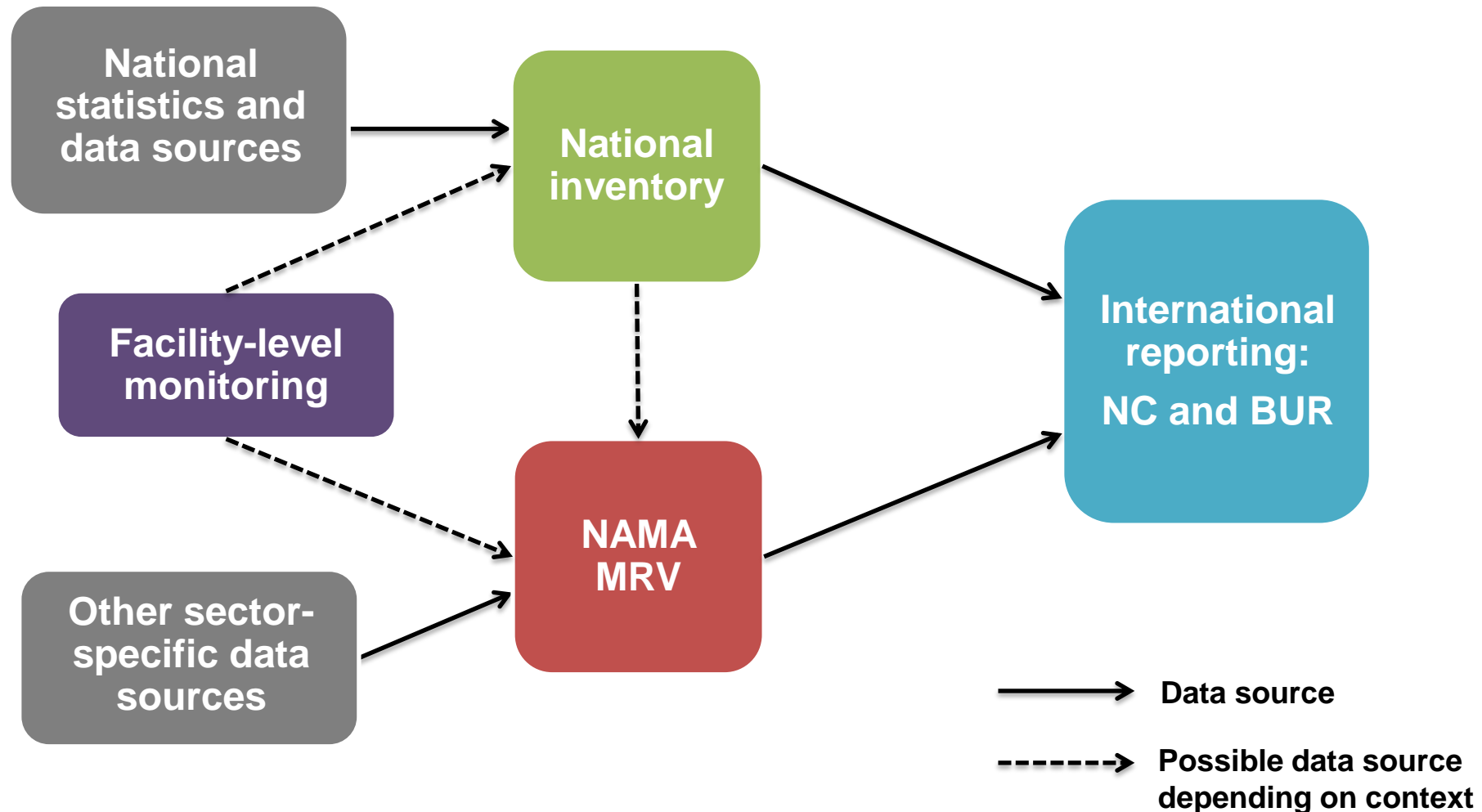
INSTITUTIONAL ARRANGEMENT FOR NATIONAL INVENTORY SYSTEM: EXAMPLE FROM INDIA



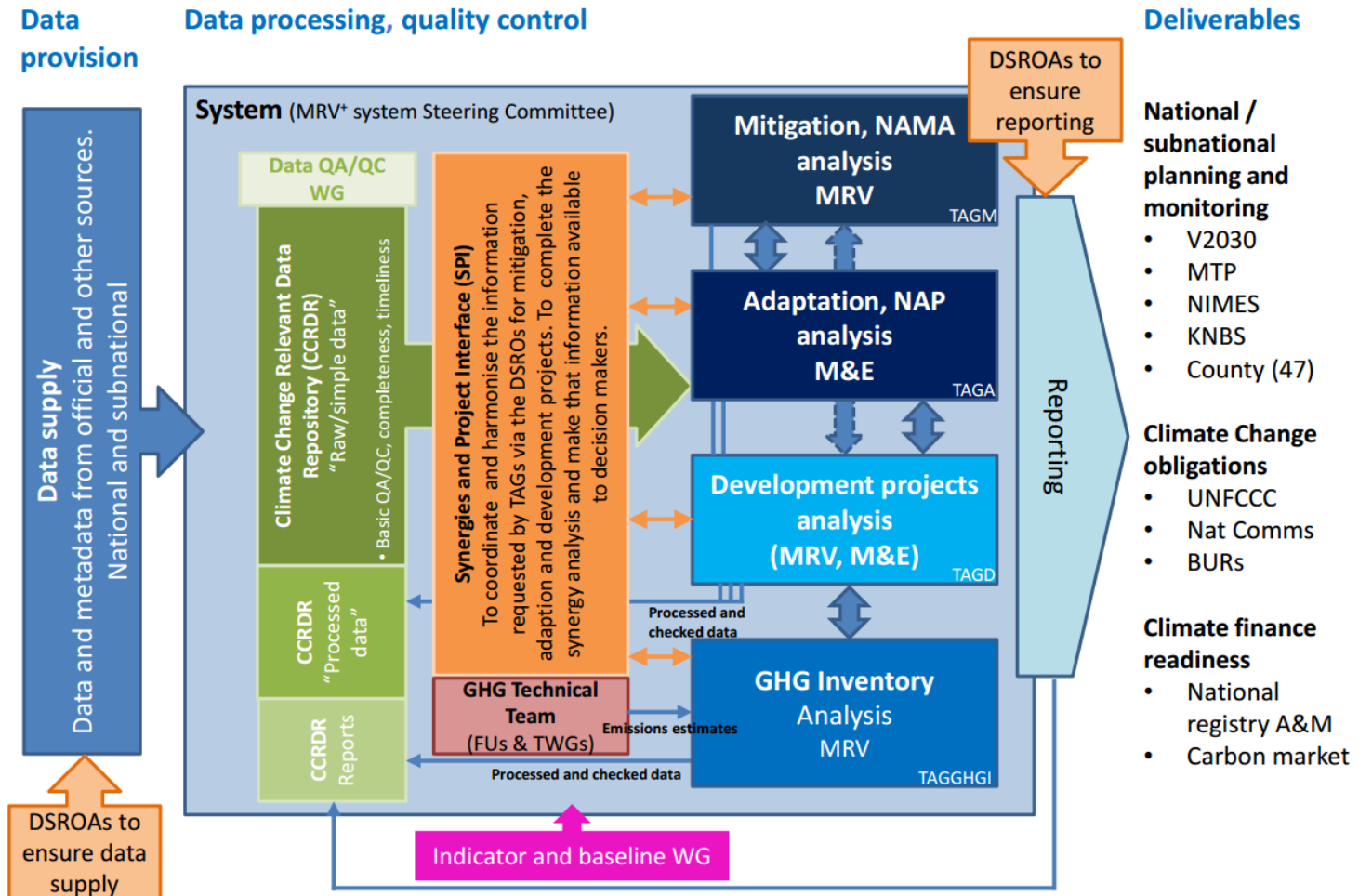
AFRI	Arid Forest Research Institute	IFGTB	Institute of Forest Genetics and Tree Breeding
ARCBR	Advanced Research Centre for Bamboo and Rattans	IFP	Institute of Forest Productivity
BCKVV	Bidhan Chandra Krishi Vishwa Vidyalaya	IGFRI	Indian Grassland and Fodder Research Institute
CFRHRD	Center for Forestry Research and Human Resource Development	IIP	Indian Institute of Petroleum
CII	Confederation of Indian Industry	IISc	Indian Institute of Science
CIMFR	Central Institute of Mining and Fuel Research	IVRI	Indian Veterinary Research Institute
CLRI	Central Leather Research Institute	IWST	Institute of Woods Science and Technology
CMA	Cement Manufacturers Association	JU	Jadavpur University
CRRRI	Central Road Research Institute	NDRI	National Dairy Research Institute
CSFER	Centre for Social Forestry and Eco-Rehabilitation	NEERI	National Environmental Engineering Research Institute
FRC	Forest Research Centre	NPL	National Physical Laboratory
FSI	Forest Survey of India	NRSA	National Remote Sensing Agency
HFRI	Himalayan Forest Research Institute	PPAC	Petroleum Planning and Analysis Cell
IARI	Indian Agricultural Research Institute	RFRI	Rain Forest Research Institute
ICFRE	Indian Council of Forestry Research and Education	TERI	The Energy and Resources Institute
IEG	Inventory Expert Group	TFRI	Tropical Forest Research Institute

LINKAGES BETWEEN NATIONAL MRV SYSTEMS AND INTERNATIONAL REPORTING

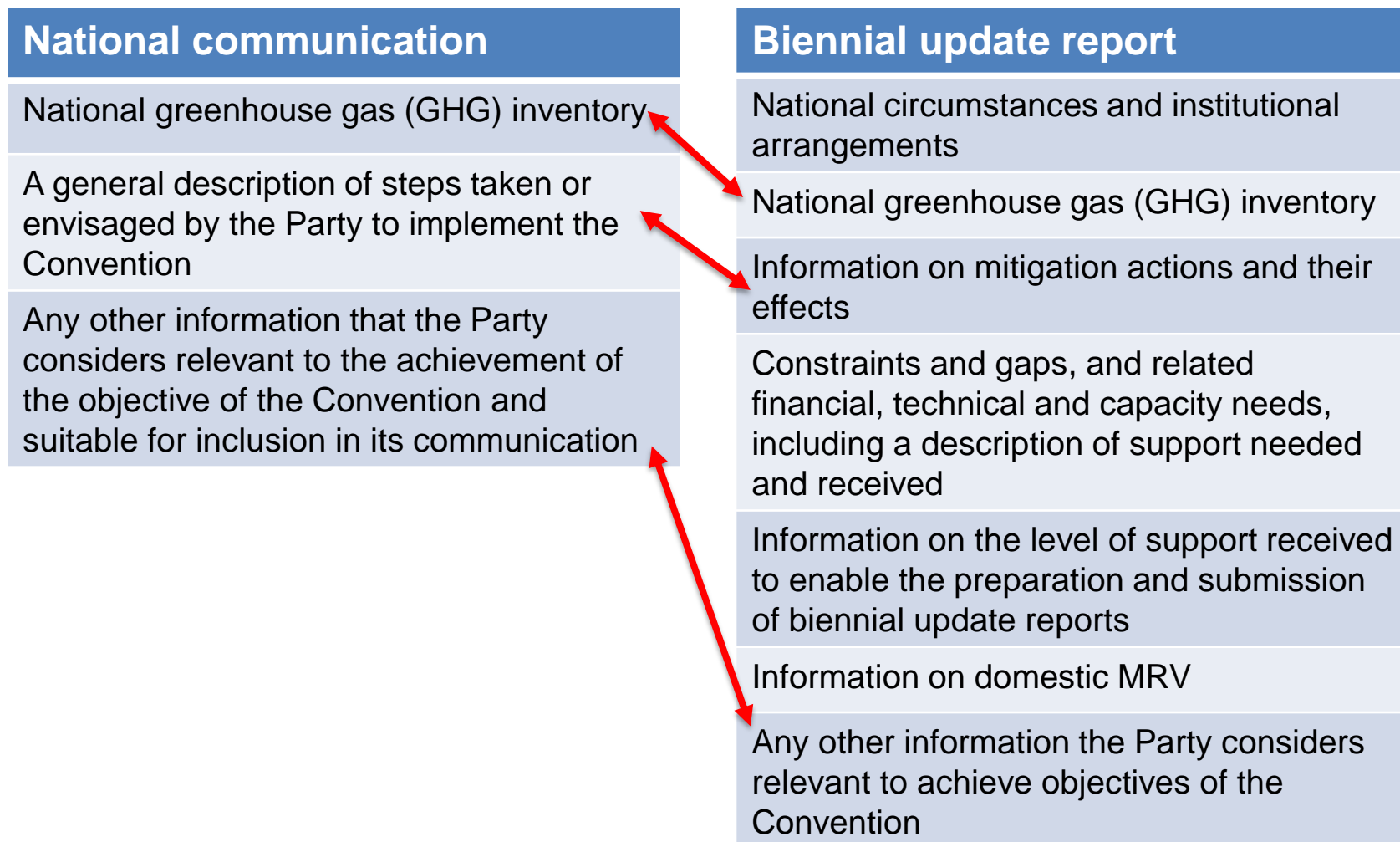
LINKAGES BETWEEN NATIONAL MRV SYSTEMS AND INTERNATIONAL REPORTING



NATIONAL MRV DATA MANAGEMENT SYSTEM: EXAMPLE FROM KENYA

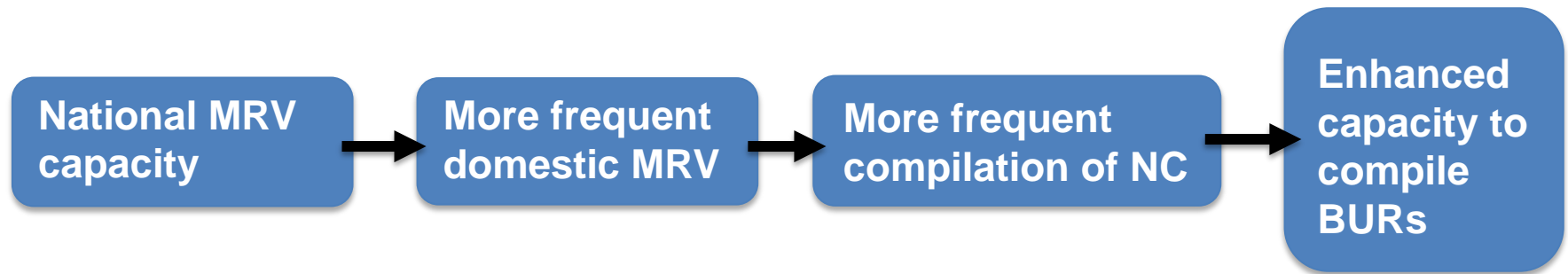


STREAMLINING INTERNATIONAL REPORTING



LINKAGES BETWEEN NATIONAL MRV SYSTEMS AND INTERNATIONAL REPORTING

- Strong national MRV system enable countries to meet international reporting requirements



WRI RESOURCES FOR NATIONAL MRV

MRV Area	Select WRI Resources
Corporate/ facility-level inventories	<p><u>Standard:</u></p> <ul style="list-style-type: none">• GHG Protocol Corporate Standard <p><u>Analysis:</u></p> <ul style="list-style-type: none">• “Measuring to Manage: A Guide to Designing GHG Accounting and Reporting Programs”• Assisting with PMR Mandatory Reporting Design Guide• “Designing Greenhouse Gas Reporting Systems: Learning from Existing Programs” September 2013
NAMAs	<p><u>Standard:</u></p> <ul style="list-style-type: none">• GHG Protocol Mitigation Accounting Standards<ul style="list-style-type: none">• Policy and Action Standard• Mitigation Goals Standard <p><u>Analysis:</u></p> <ul style="list-style-type: none">• “Designing National Commitments to Drive Measurable Emissions Reductions After 2020” November 2013• “Ex-ante clarification and understanding of intended nationally determined mitigation contributions” Forthcoming• “Best in class” collaboration with countries putting forward contributions

THANK YOU

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