

Climate Change Adaptation on Health Sector in Indonesia

A Review Study for Asian Development Bank

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1. Background



Indonesia is considered one of the regions severely affected by the impacts of climate change.



The new climate regime may **raise the disease incident rate and increase disease infection and transmission**. The adapted disease agents will **increase disease infection in intensity, scope, and magnitude**



Changes in the number of climate-related diseases will affect health sectors up to **1.86% or USD 21.6 Billion** of the National GDP (MoEF, 2020)

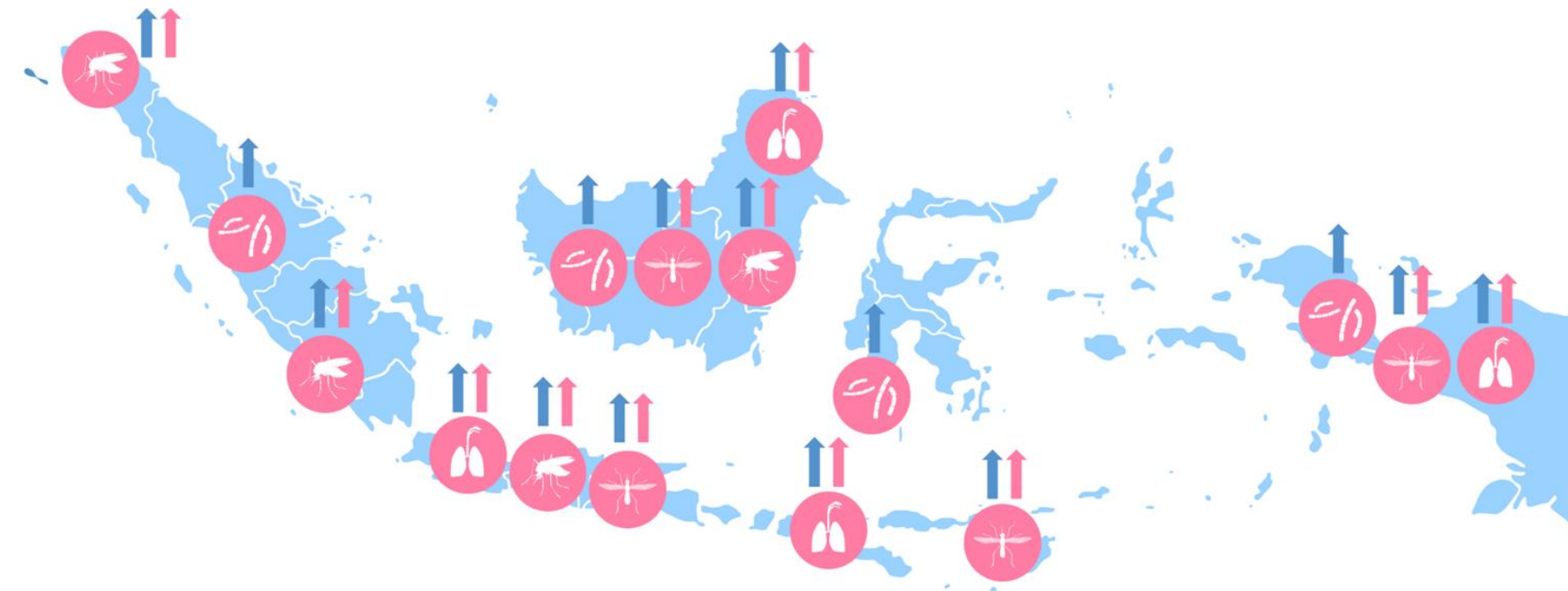


- Health Issues (in terms of Climate Change) is one of the priorities in Indonesia's NDC and Development Plan (RPJMN)
- Health Indonesia already has a **Health National Action Plan (HNAP) draft** as a guidance and reference for coordinating adaptation actions for health sector, but the document has not been implemented operationally. (MoH, 2019)
- In 2020 – 2021, MoH developed **Guideline for Implementation Health Climate Resilient Village (DESA DESI)**



Source: MoH, 2019

2. Profile of Climate Change and Health in Indonesia – Future Prediction



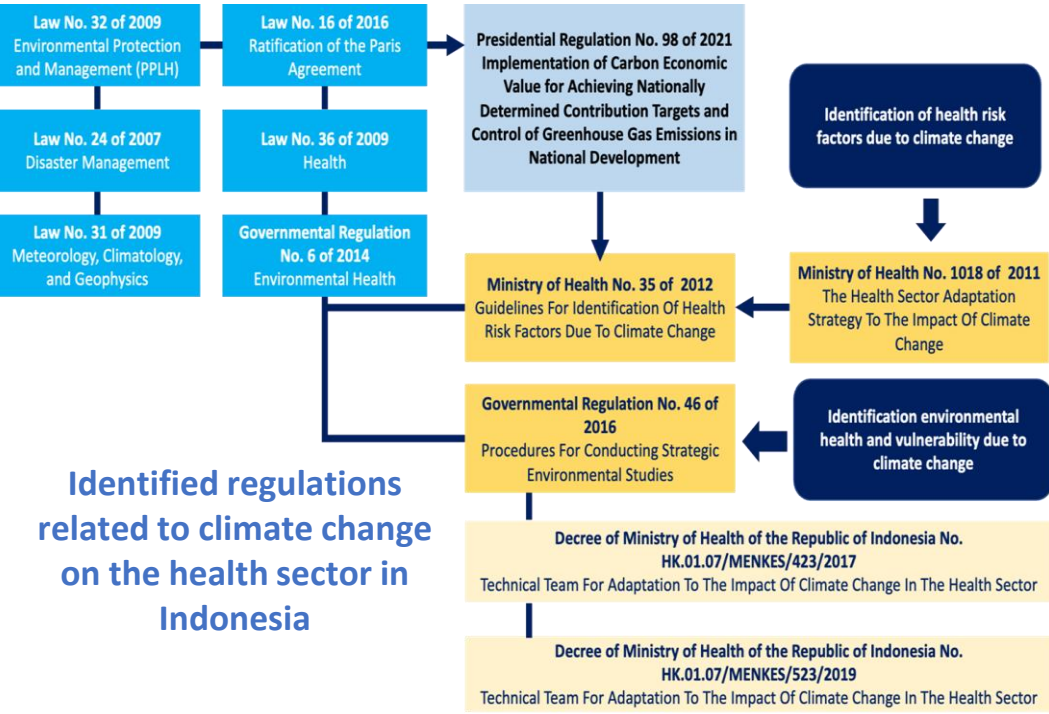
Disease	Climate Factor	DIARRHEA	PNEUMONIA	DENGUE	MALARIA
Dengue	Increased Rainfall (Blue arrow up)	Cases Highest: West Java Lowest: Papua	Cases Highest: Central Java Lowest: Papua	Cases Highest: Jakarta Lowest: Maluku	Cases Highest: Papua Lowest: Sumatera
Malaria		Change in Cases ↓ 48% (Kalimantan) ↑ 19% (Maluku, Papua)	Change in Cases ↓ 52% (Sulawesi) ↑ 96% (Maluku, Papua)	Change in Cases ↓ 59% (Java) ↑ 227% (Bali Nusra)	Change in Cases ↓ 89% (Java) ↑ 66% (Papua)
Diarrhea	Increased Temperature (Red arrow up)				
Pneumonia					

- Potential losses** resulting from changes in climate-related diseases accounted for **1.86% or USD 21.6 billion of the national GDP in 2030 (MoEF, 2020)**
- Health risks from the threats of climate change (MoH 2021):** vector-borne diseases, water-borne and food-borne diseases, air-borne diseases, non-communicable diseases, disasters, and nutritional problems.
- Climate change affects the **distribution pattern** of disease vectors and **increases the incidence** of disasters that trigger an increase in disease incidences.

The identified diseases which are closely related to the impacts of climate change in Indonesia.

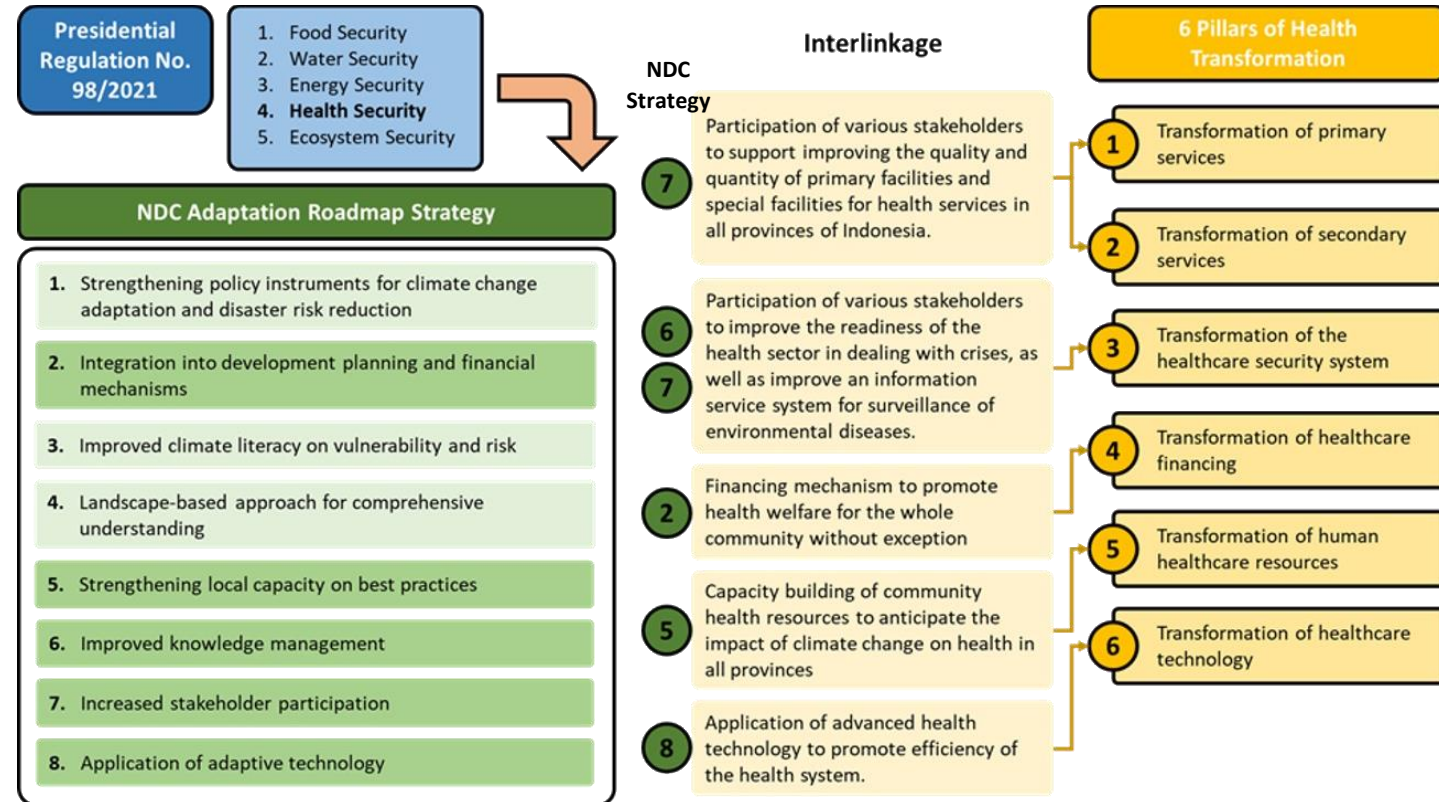
Source: Draft HNAP (MoH 2019).

3. Existing Legal Basis for CCA in Health Sector



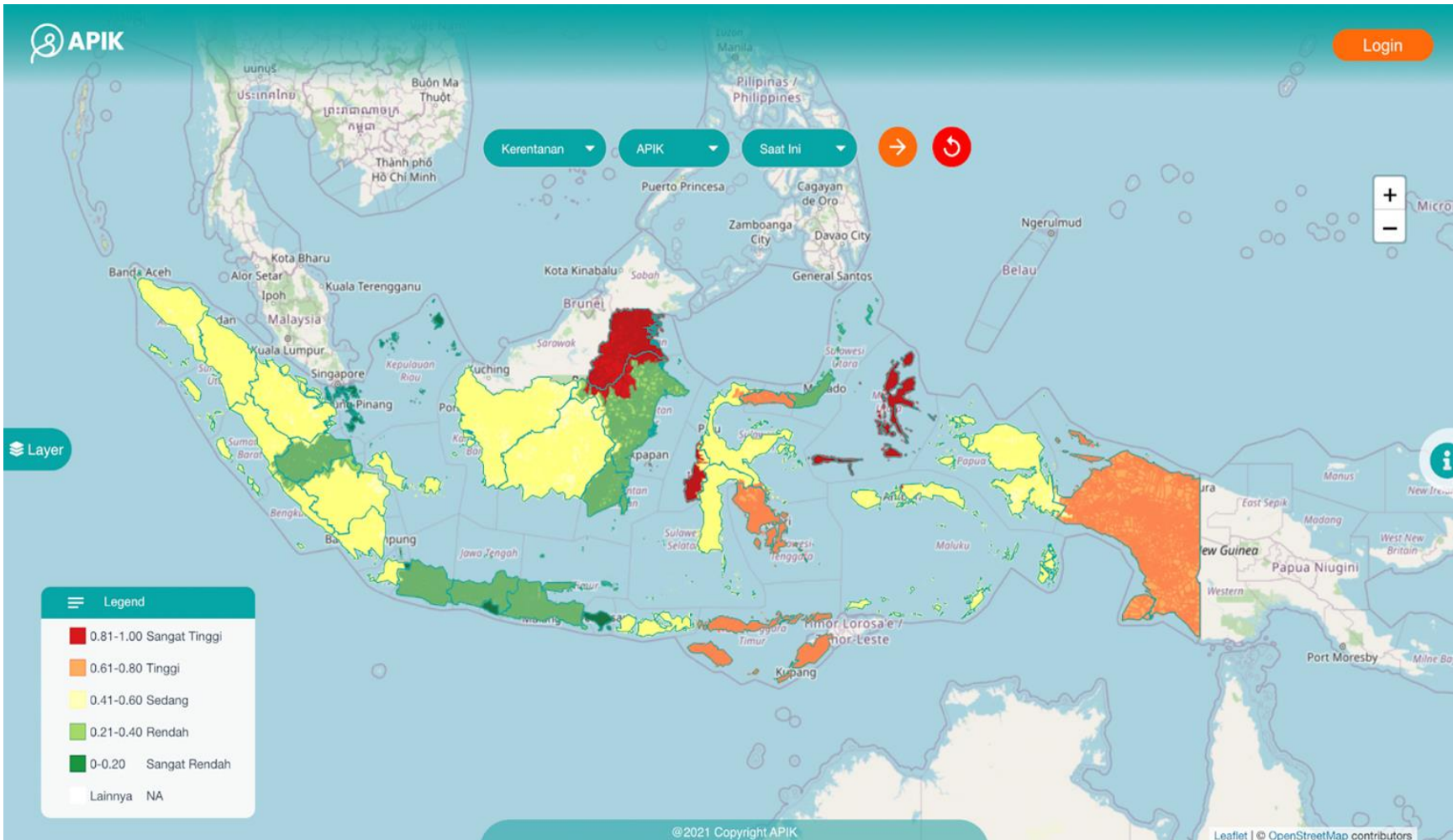
Climate change adaptation for the health sector in Indonesia is **directed to reduce current and future risks** following the mandate of law No. 16 of 2016 concerning the Ratification of the Paris Agreement

The interlinkage between the directives of Presidential Regulation No. 98/2021, the Adaptation Strategies proposed in the NDC Roadmap on Adaptation, and the Six (6) Pillars of Health Transformation



The connection of the NDC strategies on adaptation with the six pillars of health transformation can help formulate interlinkage actions that encourage climate-health resilience in Indonesia.

4. Health Risk in Indonesia



The APIK Portal developed by MoH* (<https://apikkemkes.id/home>)

- Many studies on CCA in Health still focused on dengue and malaria.
- Existing tools on climate-health risk:
 1. Adaptasi Perubahan Iklim Kesehatan (APIK) Portal (<https://apikkemkes.id/home>)
 2. Sistem Data dan Indeks Kerentanan (SIDIK) <http://sidik.menlhk.go.id/>
 3. The health information services delivered by the Pusat Krisis (MoH), <https://pusatkrisis.kemkes.go.id/>
 4. Risk assessment portal (INARISK) by BNPB, <https://inarisk.bnpb.go.id/>

*Recently, MoH is in the process of conducting studies to update and complete the APIK Portal
INTERNAL. This information is accessible to ADB Management and staff. It may be shared outside ADB with appropriate permission.

4. Risk Assessment and 6 Pillar Health Transformation

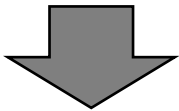
The availability and compatibility of health data and information is still challenging for conducting health assessments in Indonesia

The MoH Studies in 2020, finds that:

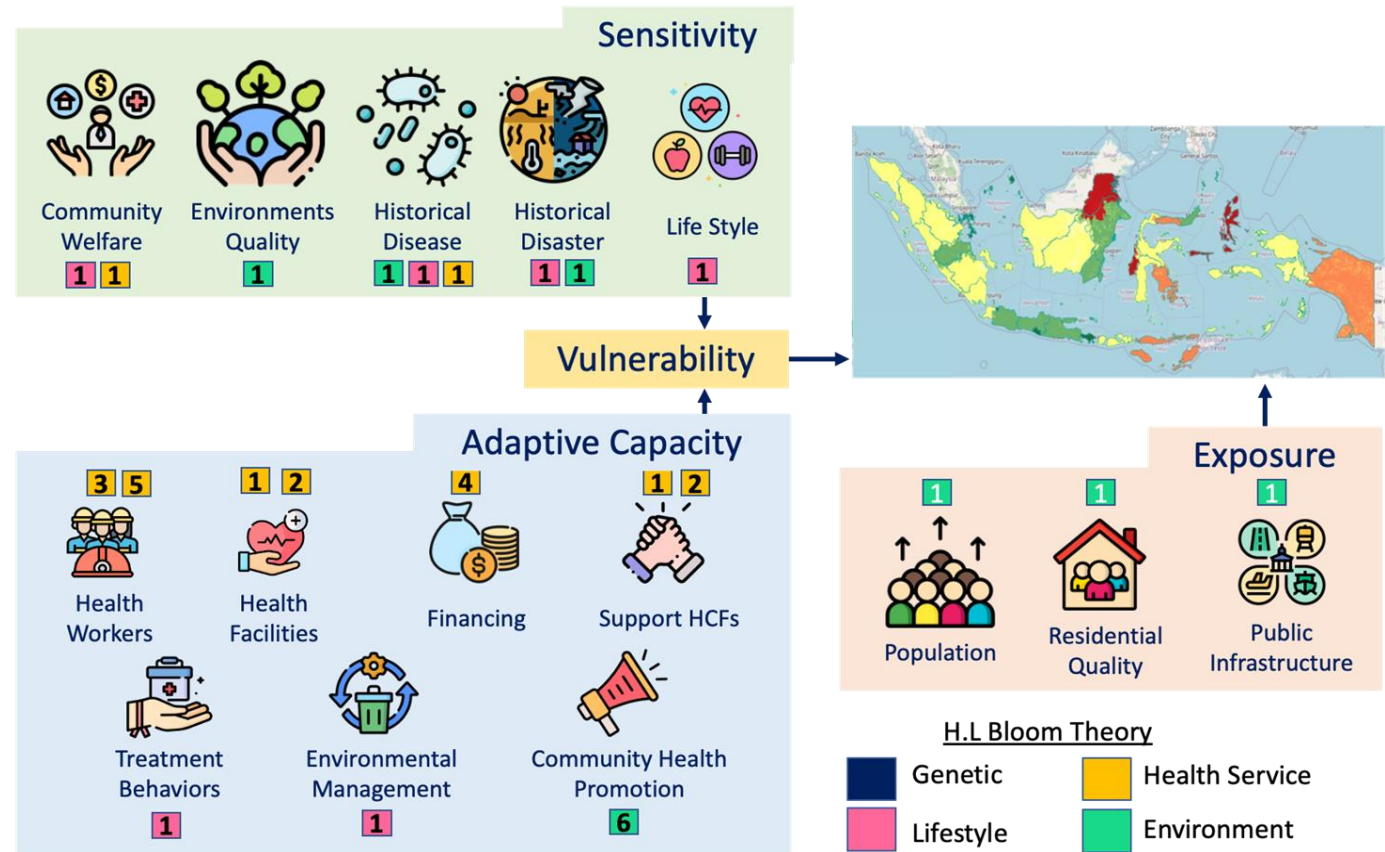
The main issues on data and information readiness:

- 1) Differences in the format and period of recording for specific types of disease
- 2) Availability of data only at the provincial level or in certain areas
- 3) Unpublished and limited access to data

Triggered by



- 1) Differences in priorities refer to the disease incidences
- 2) Disparities in health worker's understanding of data and information for specific disease
- 3) There is no specific Standard Operational Procedure (SOP) for data recording and sharing mechanisms for climate-related diseases



Notes:

The number in the box shows the interlinkage of health risk indicators that can be supported by the six pillars of health transformation: 1) Primary care; 2) Secondary Services; 3) Healthcare system; 4) Health Financing System; 5) Health Human resources; 6) Health Technology

The interlinkage of the identified health risk indicators and the six pillar of digital health transformation initiated by the Ministry of Health in 2021

5. Necessary Activities for Climate Change Action Plan – Current Situation on Action Program

Identification and connection of existing program related to climate and health in Indonesia

1. RAN-APIK	2	CLIMATE	HEALTH	
2. Surveillance system	1,3	CLIMATE	HEALTH	
3. Mapping the health risk	1,3,4	CLIMATE	HEALTH	
4. Support programme	1	HEALTH		
5. Global Framework for Health	1,7	HEALTH		
6. Climate Resilience Dev. Policy	1,2	CLIMATE	HEALTH	
7. CCHealth Technical Team	1	CLIMATE	HEALTH	
8. Desa Desi	5	CLIMATE	HEALTH	
9. PHBS Fokus Anak	3	HEALTH		
10. Study CC Health Impact	3	CLIMATE	HEALTH	
11. PROKLIM	5	CLIMATE		
12. Sekolah Adiwiyata	5	CLIMATE		
13. APIFA	5	CLIMATE		
14. STBM	5	CLIMATE		
15. Kab/Kota Layak Anak	5	CLIMATE	HEALTH	
16. Kota Sehat	5	HEALTH		
17. GERMAS	5	HEALTH		
18. Pemberian Makanan Tambahan	5	HEALTH		
19. WASH Fokus Anak	5	HEALTH		
20. Desa Peduli Iklim	5	CLIMATE		
21. SPAB	5	CLIMATE		
22. Sekolah Aman Bencana	5	CLIMATE		
23. KATANA	5	CLIMATE		
24. DESTANA	5	CLIMATE		
25. Mitra Muda, ADAP Training	6	HEALTH		
26. APIK Portal	6	CLIMATE	HEALTH	
27. USEKREM Portal	6	HEALTH		
28. Pelayanan Informasi Rawan Bencana	6	HEALTH		
29. Pemulihan Lahan Tercemar	7	CLIMATE	HEALTH	
30. Green Industry Award	7	CLIMATE	HEALTH	
31. GERILYA	7,8	CLIMATE		
32. Energy Championship	7	CLIMATE		
33. Pengurangan Energi Fosil	7,8	CLIMATE		
34. Green Industry	7	CLIMATE		
35. PROPER Programme	7	CLIMATE	HEALTH	
36. Health Service Platform	6	CLIMATE		
37. Health Insurance	2	CLIMATE		
38. Hospital Accreditation	7	CLIMATE		



Key Stakeholder

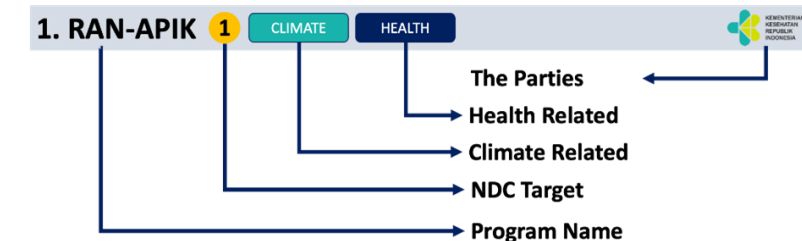
Strategy of NDC Roadmap on Adaptation Aspect:

1. Policy instruments for climate change adaptation and disaster risk reduction
2. Integration into development planning and financial mechanisms
3. Improved climate literacy on vulnerability and risk
4. Landscape-based approach for a comprehensive understanding
5. Strengthening local capacity on best practices
6. Improved knowledge management
7. Stakeholder participation
8. Application of adaptive technology

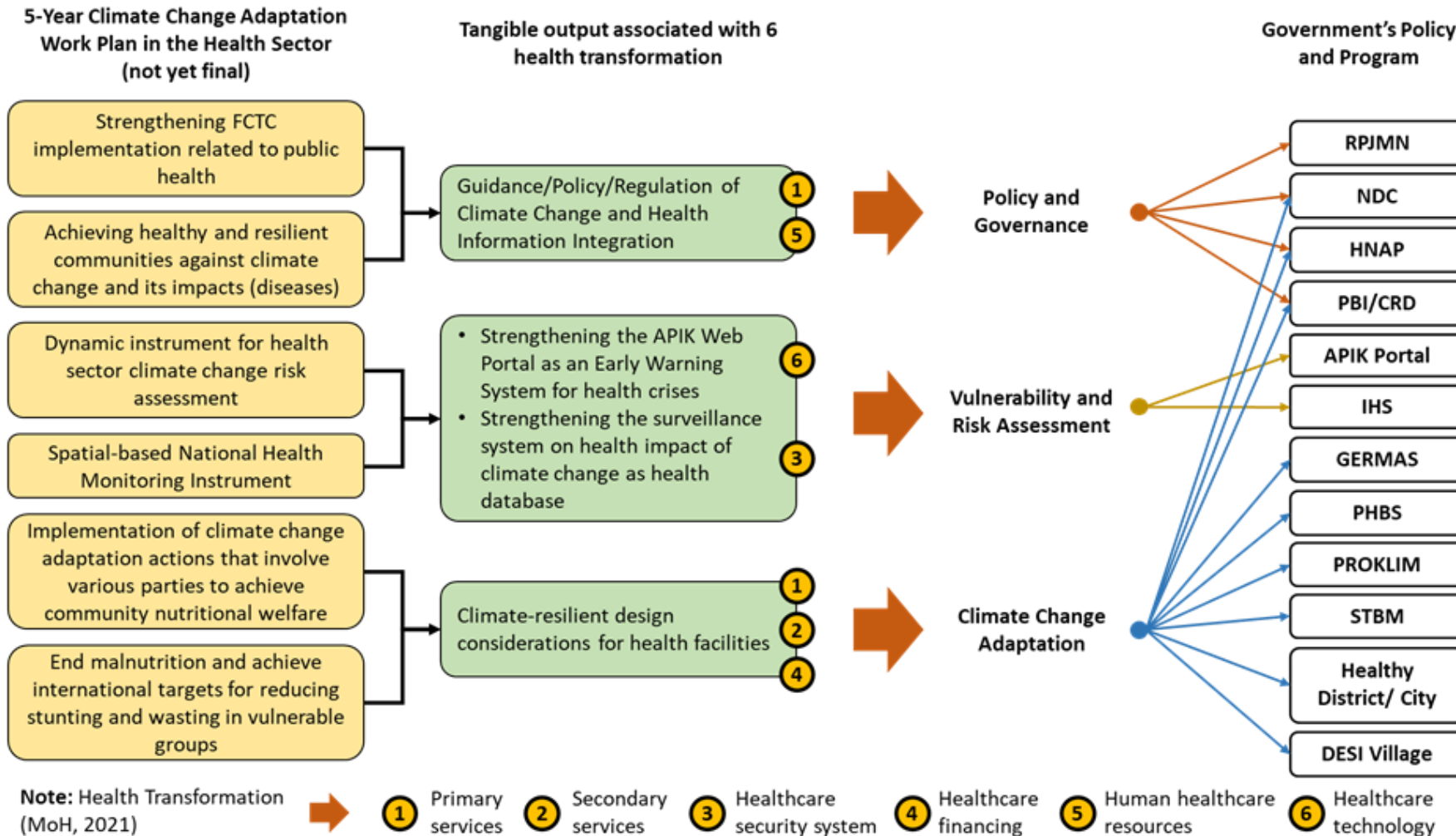
The Parties:

1. KEMENKES
2. KEMENSOS
3. KEMENPERIN
4. KEMENPUPR
5. KEMENPPA
6. KLHK
7. KEMEN ESDM
8. KEMENDIKBUD
9. KEMENPDT
10. BAPPEDA
11. BNPB
12. UNICEF
13. WHO
14. KRAS

Legend



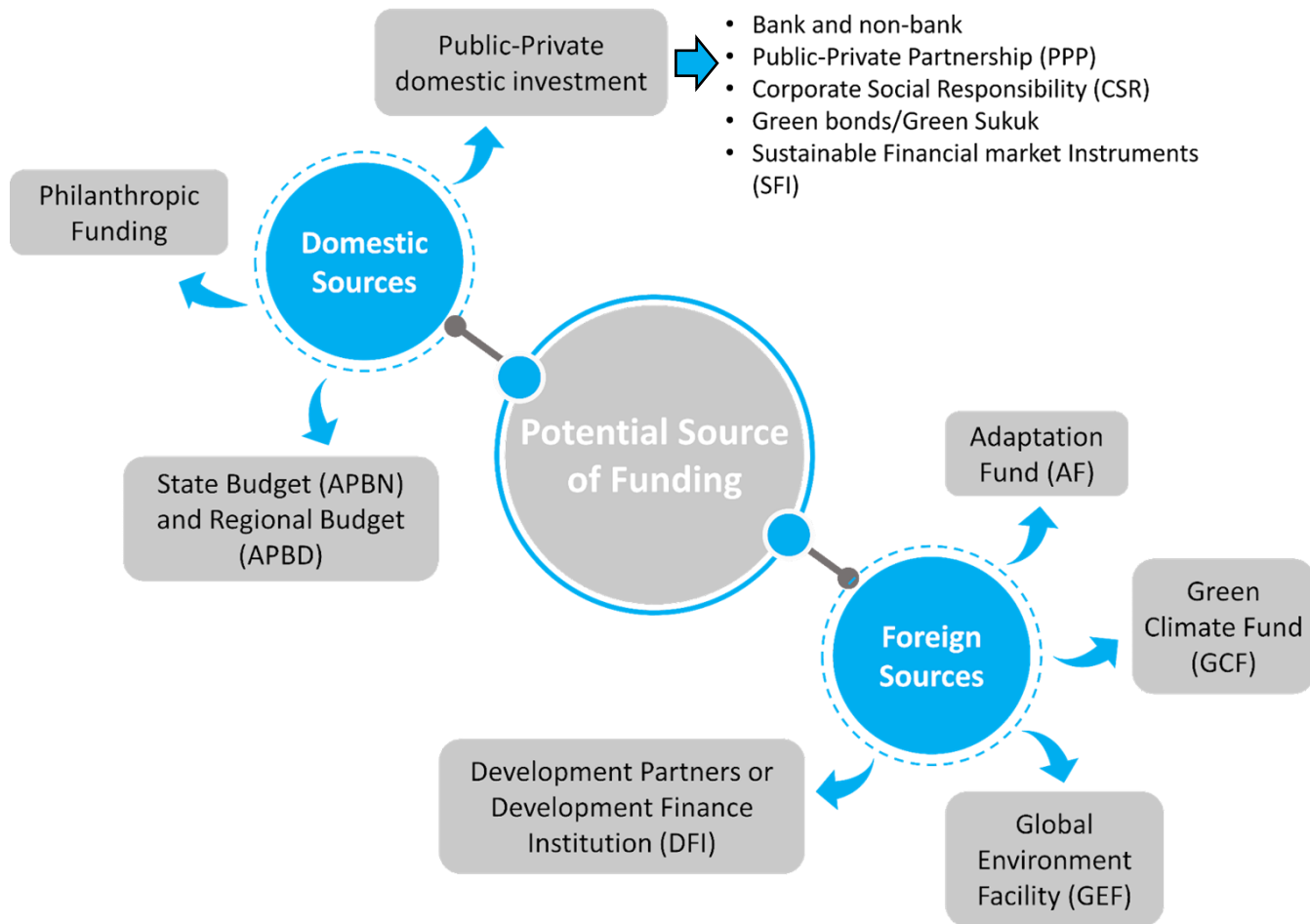
5. Necessary Activities for Climate Change Action Plan – Workplan of Action



This work plan is still ongoing and requires further effort as some work plans have not yet been implemented. The tangible outputs can be associated with the six pillars of the digital health transformation, which strengthen the health sector's resilience after the Covid-19 pandemic, and may relate to current climate change and health government programs.

The interlinkage of workplans, digital health transformation, and government policy and program

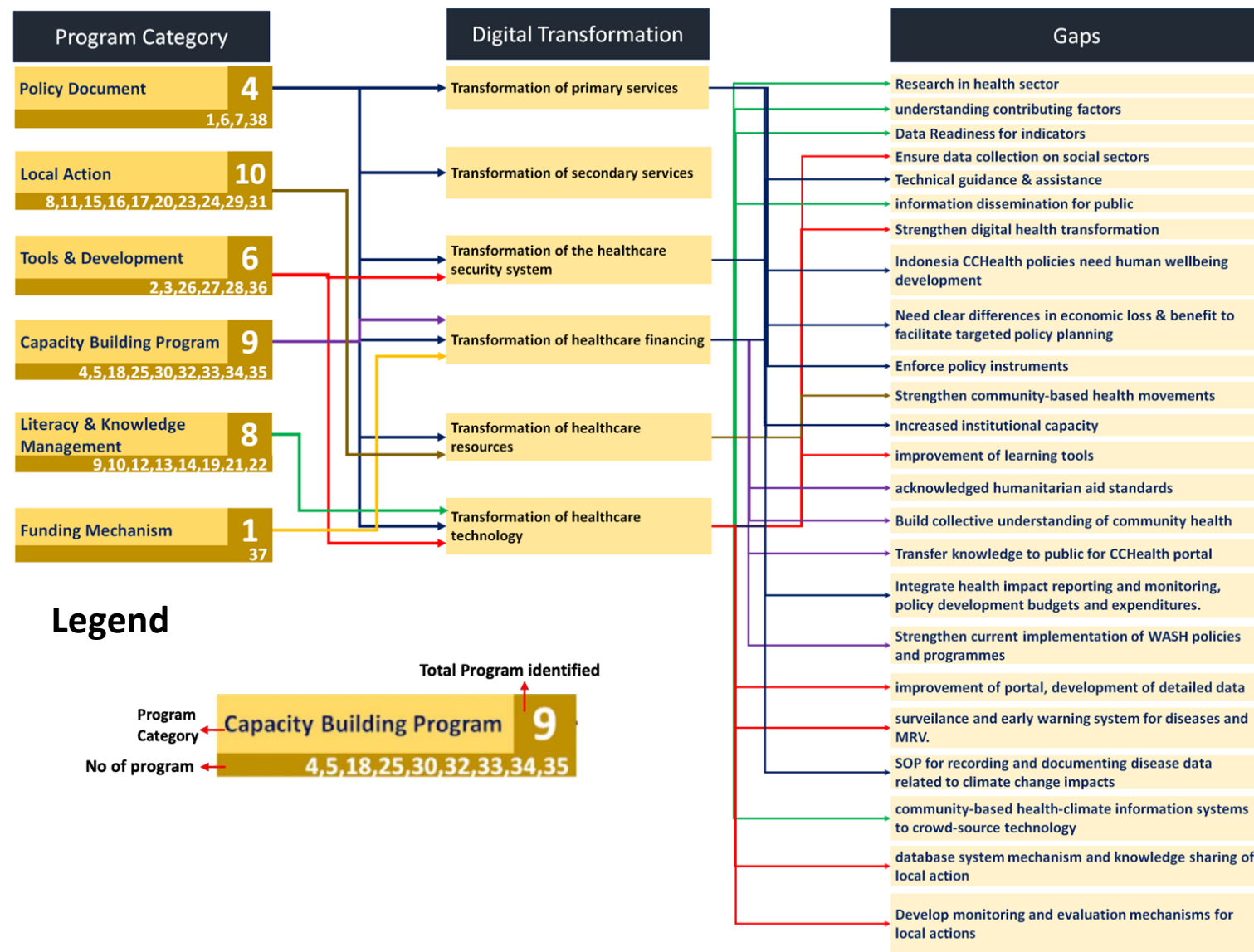
5. Actionable Strategies and Activities for Project Design and Implementation – Potential Cooperation



- There are many potential funding sources for climate change actions. However, **Indonesia has many other urgent needs or development priorities as a developing country.**
- The climate change budget allocated from the **APBN is only about 38%** of the estimated amounts needed (**around IDR 288.4 trillion annually (BUR, 2018).**)
- Not much funding has been allocated to support climate change activities that focus on reducing specific impacts on the health sector
- **Indonesia needs more both financing and technical assistance to implement climate change actions**

Sources of climate change finance in Indonesia. Source: NDC Roadmap on Adaptation document by KLHK (2021); and Climate Resilience Development Policy 2020-2045 Document by Bappenas (2021)

6. Way Forward Strategies and Recommendation - Gaps



Legend



Program

1. RAN-APIK	ALL	ALL	3	3	1	20. Desa Peduli Iklim	1-4	4	2	3	1	6	2								
2. Surveillance system		6	5	ALL		21. SPAB		3	2	4	3	7	4								
3. Mapping the health risk		ALL	ALL			22. Sekolah Aman Bencana		3	2	4	3	1	6	2	4						
4. Support programme	5-8	ALL	2	ALL	3	2	1	23. KATANA		3	2	4	6	1	4						
5. Global Framework	ALL	ALL	6	7	4	3	1	24. DESTANA		3	2	4	2	3	1	4					
6. Climate Resilience Dev. Policy	ALL	4	6	2	3	1	3	25. Mitra Muda, ADAP Training	1	1	3	2	1	7	5	5					
7. CCHHealth Technical Team	1	1	2	3	7	1	5	1	3	26. APIK Portal	ALL	ALL	2	7	3						
8. Desa Desi	ALL	3	1	2	2	ALL	5	1	3	27. USEKREM Portal	5-8	4	2	1							
9. PHBS Fokus Anak	8	5	3	4	2	1	5	7	5	1	28. Pelayanan Informasi Rawan Bencana		2	4	4						
10. Study CC Health Impact		7	3	2	1	6	3	2	29. Pemulihan Lahan Tercemar		9	6	3	6	4	2	6	2			
11. PROKLIM	9	6	1-4	4	2	3	1	6	4	2	30. Green Industry Award		9	6	3	6	2				
12. Sekolah Adiwiyata		9	6	1-4	4	4	2	31. GERILYA		9	6	3	2	3	6	2					
13. APIFA		9	6	1-4	4	7	6	2	32. Energy Championship		9	6	3	6	2						
14. STBM		8	5	4	2	7	5	1	3	33. Pengurangan Energi Fosil		9	6	3	6	3	2				
15. Kab/Kota Layak Anak		8	6	2	4	2	3	1	6	4	34. Green Industry		9	6	3	6	3	2			
16. Kota Sehat	1	1	0	1	5-8	4	2	1	7	4	1	2	1	35. PROPER Programme		9	6	3	2	1	1
17. GERMAS			5	4	7	1	5		36. Health Service Platform		5	8	7	3	2	1	4	2	1		
18. PMT			5	3	2	1	7	1		37. Health Insurance		5	8	7	3	2	1	3	4	2	3
19. WASH Fokus Anak			5	5	1	7	1		38. Hospital Accreditation		8	6	5	1	4	1	3	1			

Legend



Figure 15 Mapping gaps based on programs and policies, contributing factors, and existing climate change-health assessments and their interlinkage with digital health transformation

6. Way Forward Strategies and Recommendation – Potential Activities

Gaps are the basis for designing specific recommendations for climate change health interventions in Indonesia

Program Category	Potential Activities
1. Policy Document	<ul style="list-style-type: none"> a) Climate change policies in Indonesia related to health are still focused on environmental health and need to be developed towards human wellbeing; b) Need to distinguish differences in economic loss & benefit (i.e. Urban, Coastal, Age Group, Gender) to facilitate more targeted policy planning; c) Enforce policy instruments and strategies for health and nutrition aspects focusing climate issues on emergency preparedness and disaster management for nutrition in an emergency, including the development of a national emergency nutrition toolkit; d) Increase institutional capacity in the health sector in dealing with outbreaks of infectious and non-communicable diseases caused by climate change; e) Development of standard operating procedures (SOP) for recording and documenting disease data related to climate change impacts.
2. Local Action	<ul style="list-style-type: none"> a) Strengthen national and sub-national working groups on integrated and community-based health movements (e.g., Citizen Health Movement) to better address the climate change risks to environmental health b) Supporting the Healthy Climate Village (Desa Sehat Iklim) initiative through a pilot project and providing implementation needs such as technical guidance, technical assistance for coordination with pilot areas, as well as other operational needs

6. Way Forward Strategies and Recommendation – Potential Activities

Program Category	Potential Activities
3. Tools and Development	<ul style="list-style-type: none"> a) Ensure data collection on social and economic include parameters of vulnerable groups (disaggregated by age) to inform climate change risks and responses b) Strengthen the new paradigm on digital health transformation with a clear legal and policy basis. Research is needed to examine whether existing policies and regulations can accommodate all health transformation initiatives c) Improve learning tools on climate change adaptation and mitigation for health sector, stakeholders forum for sharing knowledge and action using web-based or digital platform services d) Improve web portal on climate change health and adaptation named APIK for surveillance and early action, including development for more detailed level of data displayed (i.e. village-based), providing early warning information and actions e) Develop surveillance and early warning system for diseases and MRV (monitoring, reporting, and verification) tools for supporting policy instruments and its implementation f) Develop a database system and knowledge sharing of local knowledge and actions
4. Capacity Building Program	<ul style="list-style-type: none"> a) Apply acknowledged humanitarian aid standards in emergency preparedness for multi-hazard risks, including public health emergencies and environmental and climate-driven induced threats b) Build collective understanding of community health and climate risk profiling at the community level with a view to blend local knowledge with scientific-based evidence c) Train the public to be able to access and utilize various information platforms related to health and climate change, i.e., the APIK Portal (https://apikkemkes.id/home), Air Quality Indonesia (https://www.iqair.com/Indonesia), and so on. d) Strengthen current implementation of climate sensitive policies and programmes such as the Program of Provision of Community-Based Drinking Water and Sanitation (<i>Penyediaan Air Minum dan Sanitasi Berbasis Masyarakat/PAMSIMAS</i>) in ensuring high environmental quality for human's wellbeing

6. Way Forward Strategies and Recommendation – Potential Activities

Program Category	Potential Activities
5. Literacy and Knowledge Management	<ul style="list-style-type: none"> a) Conduct formative research to factor in climate risks in health sector modelling with a view to providing scientific-based evidence for decision and policy-making processes b) Distinguish climate and non-climate contributing factors to vulnerability of health sectors through a comprehensive research assessment c) Identify data readiness for indicators of climate-health assessment, particularly socio-economic determinants differentiated by gender- and age-group d) Develop knowledge management information to the public about outbreaks of infectious diseases caused by climate change e) Deploy community-based health-climate information system using crowd-source technologies which allow communities to meaningfully participate in anticipatory actions and risk mitigation measures
6. Funding Mechanism	<ul style="list-style-type: none"> a) Integrate climate-resilient health in policy development budgets and expenditures b) Allocate substantial fundings for climate change actions on health c) Develop guidance to include climate actions on health into national and sub-national financing mechanisms d) Develop tools to measure the effective and efficiency of funding allocations e) Build capacity of national and sub-national stakeholders in accessing different sources of fundings for climate change actions

Thank You

