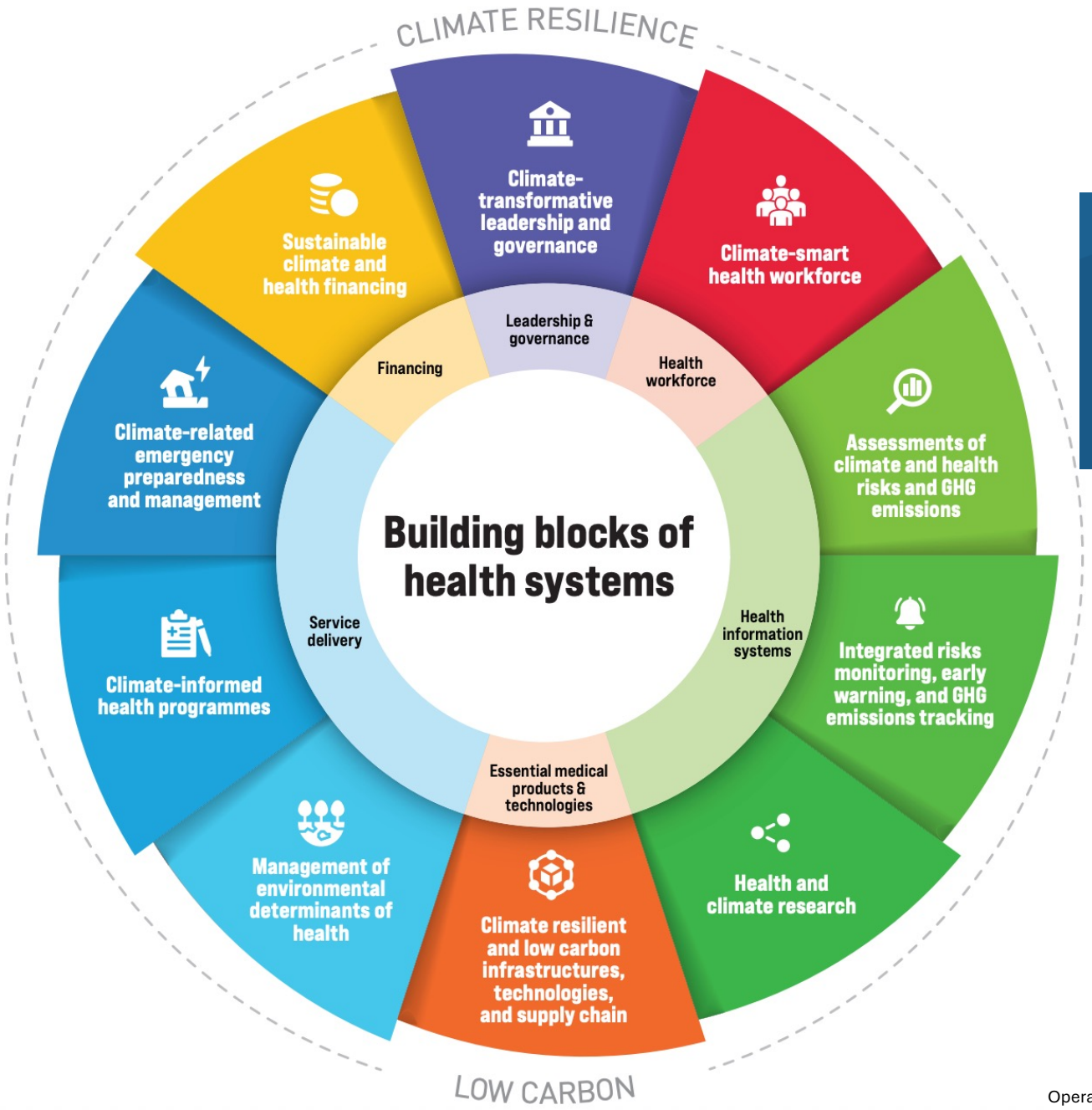
Capacity building for climate and health

Beyond Technical Training: Eco-Ethical Leadership as a Foundation for Climate-Resilient Health Systems in Indonesia

Outline

- Foundational concept for building climate and health resilience (WHO Framework Building Block 2023)
- The duty and gap?
  - Health practice contribute to climate problems→ moral responsibility of health systems and professionals to participate
  - Challenges to achieve resilience?
- Eco-ethical leadership to fill the gap towards climate and health resilience
- UGM Experiences in building climate-resilient health system
  - Technology, community, policy governance initiatives (UGM evolution climate action 2012-2025)
  - Education initiatives for eco-ethical leadership (FMPHN Module Green Health Care, Master Bioethics – MK Bioetika Lingkungan)
- Recommendation for Academy's Capacity Building in Climate and Health



World Health Organization

Operational framework for building climate resilient and low carbon health systems

Operational framework for building climate resilient and low carbon health systems. Geneva: World Health Organization; 2023.

Filosofi Inti: Mengintegrasikan Iklim, Kesehatan, dan Teknologi

Pendekatan Universitas Gadjah Mada tidak hanya berfokus pada perawatan pasien, tetapi pada transformasi sistem secara menyeluruh menuju Net Zero.



NotebookLM

UNIVERSITAS
GADJAH MADA

Inisiatif UGM untuk Aksi Iklim dan Kesehatan (2012-2025)

Membangun Sistem Kesehatan yang Tangguh dan Rendah Karbon

Locally Rooted, Globally Respected.

NotebookLM

Eskalasi Dampak: Perjalanan Transformasi 2012–2025

Dari inisiatif akar rumput di Gunungkidul hingga kepemimpinan kebijakan nasional dan global.

2012-2013: Fondasi eHealth & Mitigasi (CCMAP)

2013-2016: Inovasi Prediktif (Sistem Peringatan Dini DBD)

2015: Peningkatan Kapasitas Regional (WHO SEARO/WPRO)

2019-2022: Pemerataan Kesehatan Berbasis Digital (Equitable Health)

2020-2022: Advokasi Kebijakan Global (S20/G20 Webinar)

2024-2025: Transisi Menuju Net Zero & Forum Masa Depan

NotebookLM

Membangun Fondasi: Pendekatan Lintas Sektor & eHealth (2012-2013)

Proyek CCMAP (Climate Change Mitigation and Adaptation Policies) yang didanai oleh SIDA menjadi pionir dalam menggunakan eHealth sebagai instrumen adaptasi iklim.



Fokus Strategis: Menggabungkan kebijakan mitigasi iklim dengan manajemen risiko bencana di sektor kesehatan.

Kolaborasi Internasional:
Kemitraan strategis antara Kabupaten Gunungkidul, Vasterbotten County, Universitas Umea, RSUP Dr. Sardjito, dan UGM.



Indonesia
(UGM/Gunungkidul)

Swedia
(Umea/Vasterbotten)

NotebookLM

Inovasi Prediktif: Sistem Peringatan Dini Demam Berdarah (2013-2016)

Didanai oleh ICLD, sistem ini memperkenalkan Decision Support System yang mengubah data multi-sektor menjadi prediksi wabah (Dengue Forecasts) yang akurat.

Kolaborasi Lintas Sektor:
Pusat Layanan Kesehatan, Badan Meteorologi (BMKG), Dinas Kesehatan & Sekolah, Program Partisipasi Warga

- Data Cuaca
- Laporan Warga
- Data Kesehatan



Prediksi Wabah DBD

NotebookLM



Memperluas Kapasitas Global: Episentrum Pelatihan WHO (2015)

UGM dipercaya untuk menyelenggarakan lokakarya pertama yang memperkenalkan modul pelatihan WHO terkait perubahan iklim bagi tenaga kesehatan profesional.

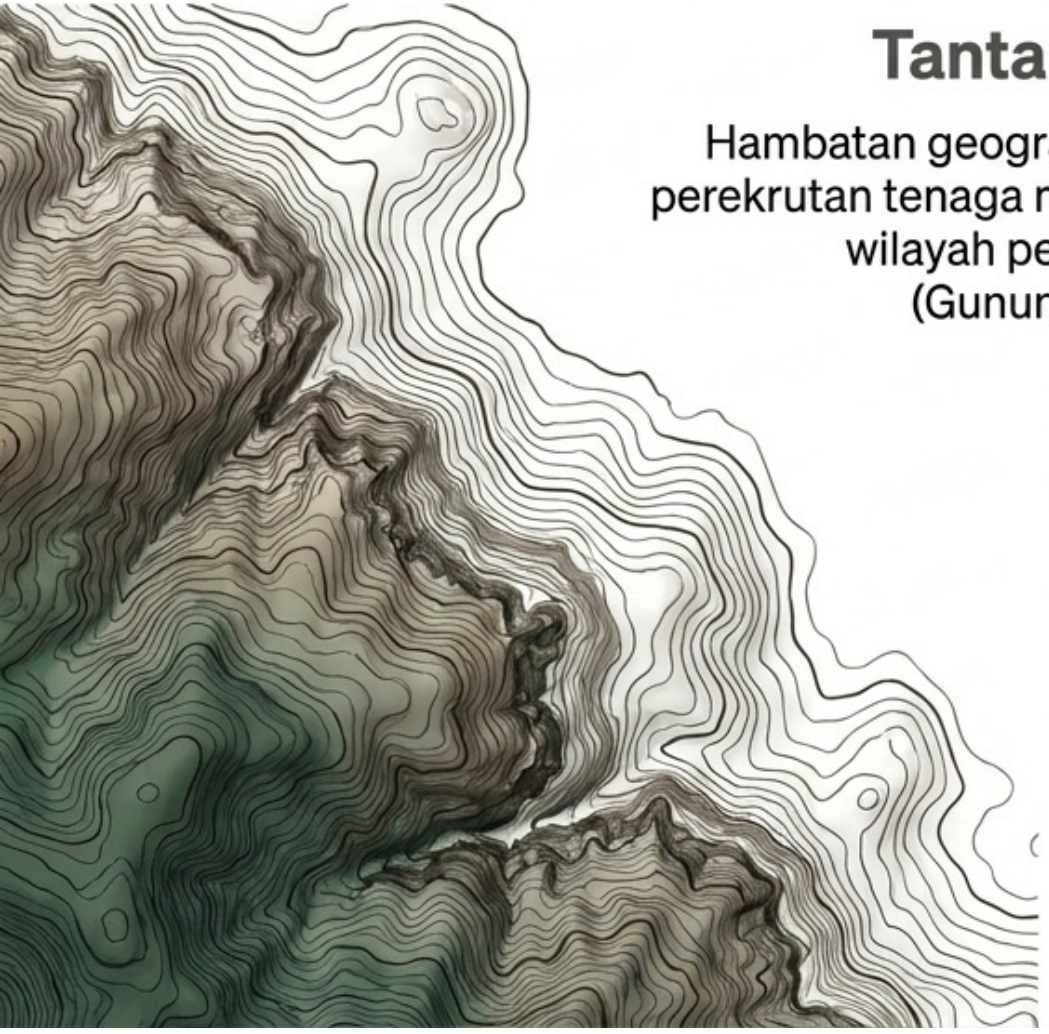
Skala Bi-Regional: Melibatkan perwakilan negara-negara dari WHO SEARO (Asia Tenggara) dan WPRO (Pasifik Barat).

Dukungan Institusional: Didukung penuh oleh GIZ (Jerman) dan WHO, mengukuhkan UGM sebagai pusat keunggulan regional.

NotebookLM

Menjembatani Kesenjangan: Proyek Equitable Health (2019-2022)

Ketahanan iklim menuntut pemerataan layanan. Proyek ICLD ini mengatasi tantangan geografis di daerah pedesaan, memastikan layanan kesehatan dapat diakses secara merata.

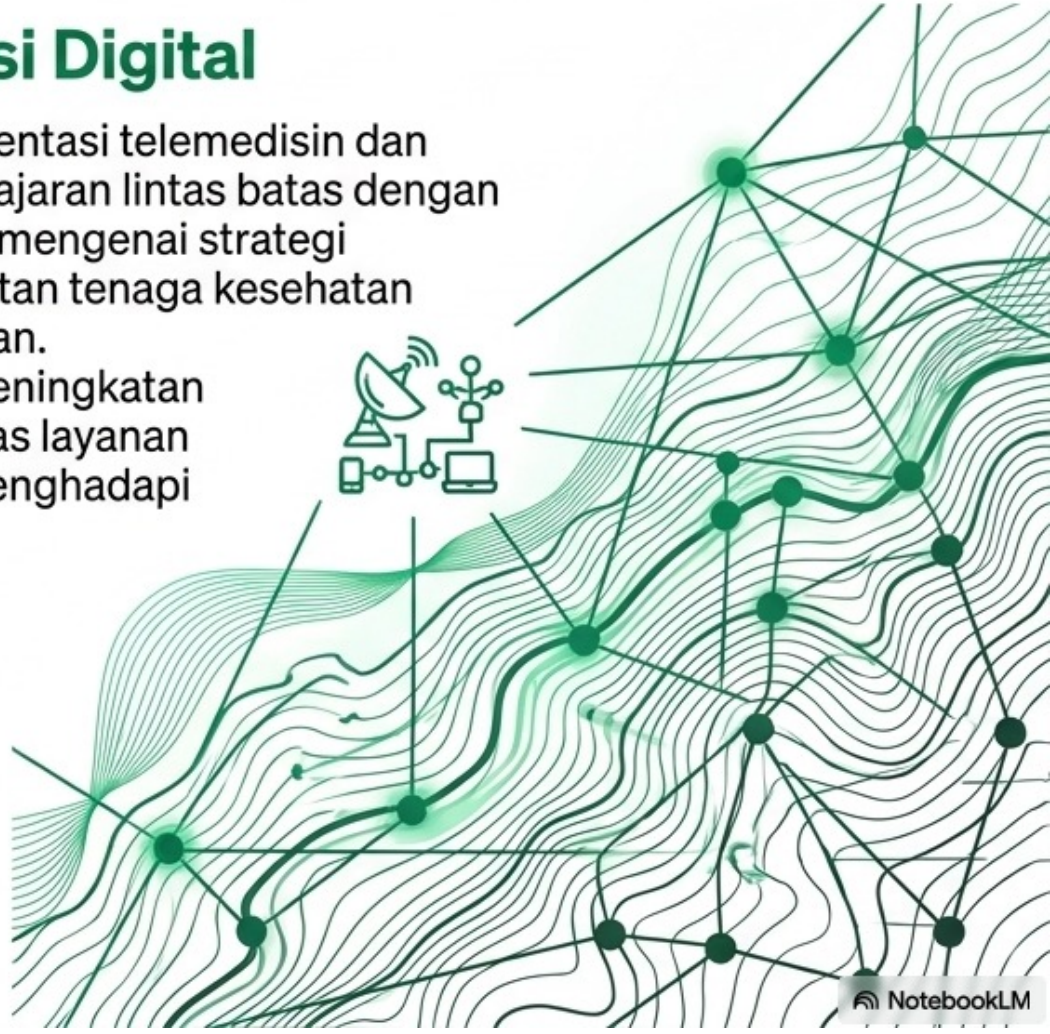


Tantangan

Hambatan geografis dan perekrutan tenaga medis di wilayah pedesaan (Gunungkidul).

Solusi Digital

Implementasi telemedisin dan pembelajaran lintas batas dengan Swedia mengenai strategi perekrutan tenaga kesehatan pedesaan.
Hasil: Peningkatan kapasitas layanan lokal menghadapi krisis.



NotebookLM

Sintesis Satu Dekade: Matriks Inovasi Akar Rumput

Evolusi metodologi UGM menunjukkan pendekatan sistematis dalam menggunakan inovasi digital untuk menjawab berbagai spektrum ancaman iklim dan kesehatan.

Tantangan Utama	Model Intervensi	Mitra Internasional
Bencana Alam & Mitigasi Kebijakan (CCMAP)	Kerangka eHealth & Tata Kelola Lintas Sektor	SIDA (Swedia)
Lonjakan Wabah Penyakit Terkait Cuaca (Sistem DBD)	Pemodelan Prediktif & Keputusan Berbasis Data	ICLD (Swedia)
Aksesibilitas Pedesaan & Kesenjangan Layanan (Equitable Health)	Jaringan Telemedisin & Rekrutmen Inovatif	ICLD & GMC Swedia

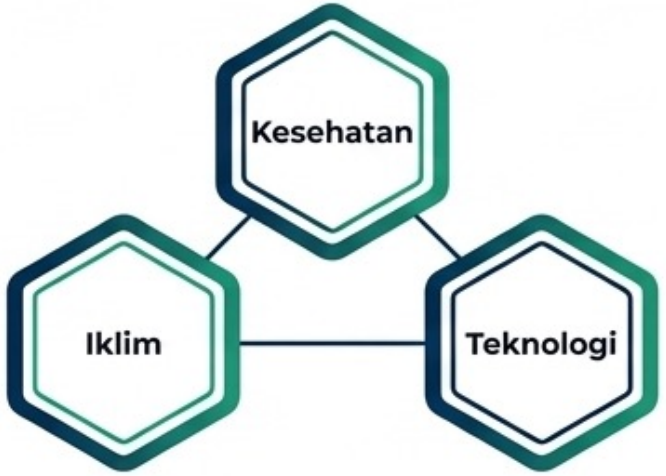
NotebookLM

Mendunia: Kepemimpinan dalam Kebijakan Tingkat Tinggi (2020-2022)

Konvergensi pengalaman praktis selama satu dekade membawa UGM ke panggung advokasi kebijakan global.

S20 High Level Policy International Webinar (15 Juni 2022)

Tema: Health, Climate Change, and Technology



Mengintegrasikan tiga pilar utama sebagai rekomendasi strategis bagi pemimpin negara-negara G20.

G20 INDONESIA 2022

S20 INDONESIA 2022 SCIENCE

NotebookLM

Menggerakkan Transisi Net-Zero Karbon (2024)

Transformasi Digital untuk Climate-Resilient & Sustainable Healthcare. Aksi nyata dimulai dengan mengukur dampaknya.



1. Pindai QR Code
2. Isi Survei Jejak Karbon
3. Analisis Emisi
4. Rumah Sakit Net Zero

Pentingnya Survei Jejak Karbon Rumah Sakit:

Menghitung total emisi (CO_2e) dari transportasi, listrik, pemanas, dan produksi fasilitas kesehatan untuk merancang strategi pengurangan karbon yang tepat sasaran.

Pindai untuk Berpartisipasi

bitly

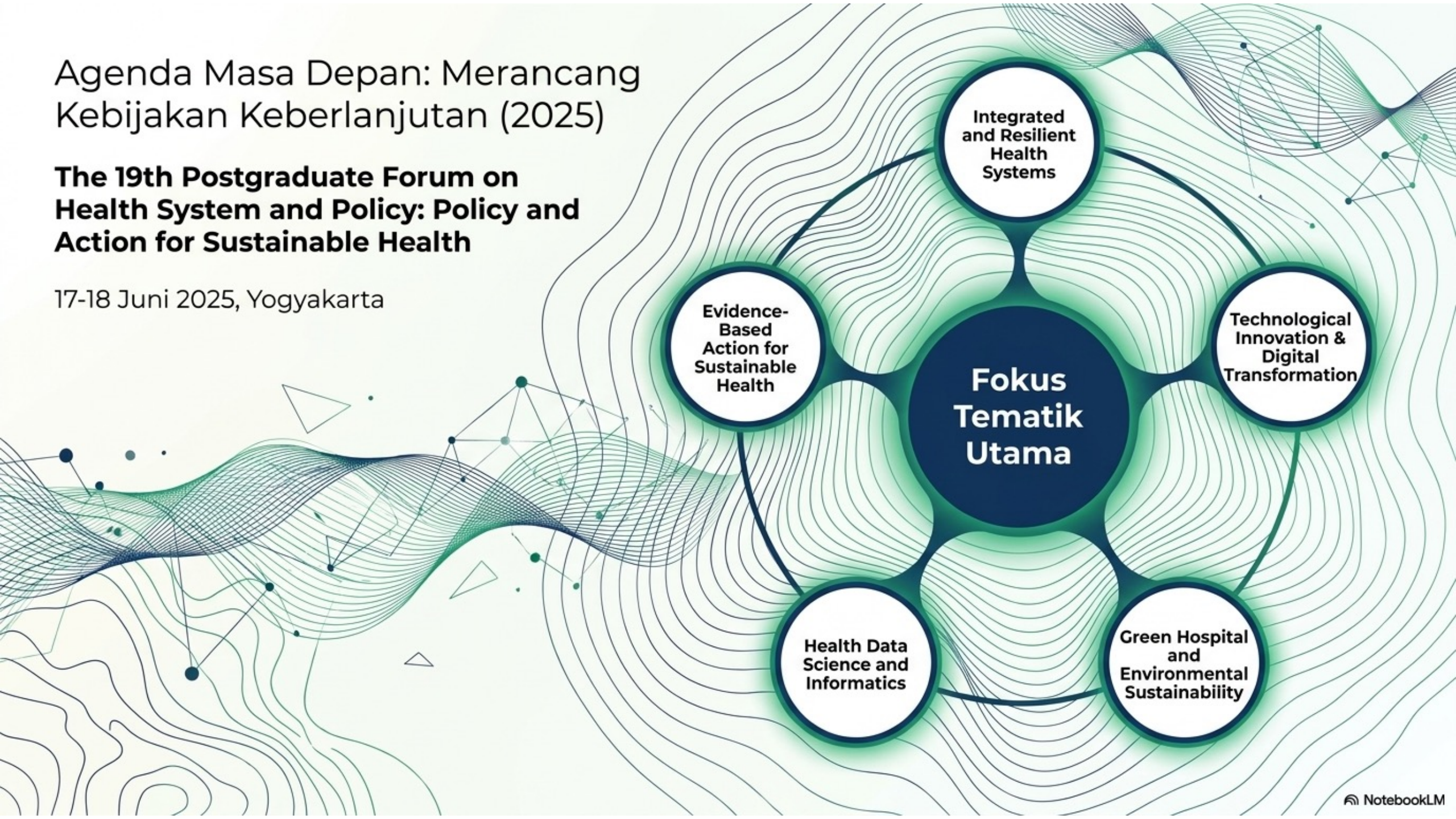
ugm.id/SurveyJejakKarbonFaskes

NotebookLM

Agenda Masa Depan: Merancang Kebijakan Keberlanjutan (2025)

The 19th Postgraduate Forum on Health System and Policy: Policy and Action for Sustainable Health

17-18 Juni 2025, Yogyakarta



NotebookLM

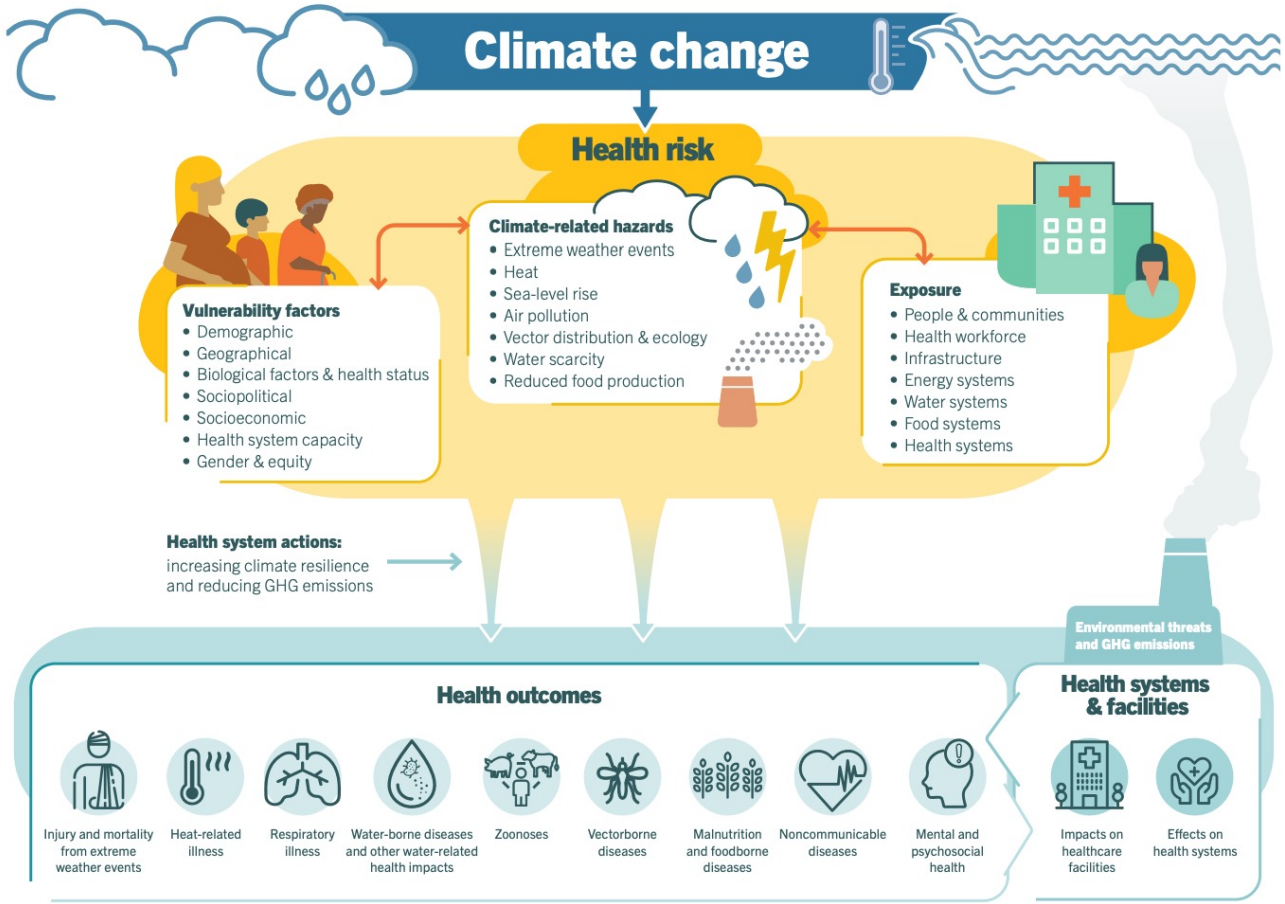
Keberlanjutan Nasional: Sistem Kesehatan Tangguh Rendah Karbon (2025)

FORNAS JKKI: Low Carbon and Resilient Health System

Menjaga momentum dari inisiatif global ke implementasi kebijakan kesehatan nasional. Memastikan setiap fasilitas kesehatan di Indonesia siap menghadapi krisis iklim sekaligus meminimalkan dampak ekologisnya.



NotebookLM



As depicted in Fig. 2.1, climate change risks to health and health systems result from a combination of multiple hazards, diverse vulnerabilities, and multiple exposures and exposure pathways. Furthermore, the figure also depicts the impact health systems have on the environment and climate change. Health systems actions should aim to modulate health risks by increasing resilience and reducing GHG emissions.

Operational framework for building climate resilient and low carbon health systems. Geneva: World Health Organization; 2023.

The moral responsibility of health professionals to participate/ contribute in climate crisis responses

bioethics

Bioethics ISSN 0269-9702 (print); 1467-8519 (online)
Volume 27 Number 6 2013 pp 305–308
doi: 10.1111/bioe.12029

CLIMATE CHANGE IS A BIOETHICS PROBLEM

CHERYL COX MACPHERSON

Keywords
climate change,
autonomy,
public health,
social values,
public policy,
bioethics,
risk assessment

ABSTRACT
Climate change harms health and damages and diminishes environmental resources. Gradually it will cause health systems to reduce services, standards of care, and opportunities to express patient autonomy. Prominent public health organizations are responding with preparedness, mitigation, and educational programs. The design and effectiveness of these programs, and of similar programs in other sectors, would be enhanced by greater understanding of the values and tradeoffs associated with activities and public policies that drive climate change. Bioethics could generate such understanding by exposing the harms and benefits in different cultural, socioeconomic, and geographic contexts, and through interdisciplinary risk assessments. Climate change is a bioethics problem because it harms everyone and involves health, values, and responsibilities. This article initiates dialog about the responsibility of bioethics to promote transparency and understanding of the social values and conflicts associated with climate change, and the actions and public policies that allow climate change to worsen.

COMPONENT 1



Climate-transformative leadership and governance

IMPORTANT:

- strong leadership and governance for climate resilience, low carbon pathways, and environmental sustainability in health systems.
- essential to ensure the integration of climate change considerations by all health programmes.

COMPONENT 2



Climate-smart health workforce

- The availability of the required health and care workforce with the required capacity to act on climate change
- Skills required include understanding and using climate information for health interventions and decision-making; engaging in cross-sectoral action; conducting research, assessments, and interventions; and effectively managing climate change risks to health and health system performance

Introducing Eco-Ethical Leadership

- Definition: leadership that treats environmental stewardship and climate justice as moral duties, thinks in systems, and distributes leadership across the network.
- Characteristics:
  (1) systems and ecological awareness
  (2) stewardship as a professional duty, extending "do no harm,"
  (3) a justice orientation toward who bears the risks,
  (4) distributed, relational leadership.
- Grounded locally:
  - Gotong royong and religious ethics of stewardship (khalifah / amanah, and similar concepts in other faiths) offer resonant Indonesian foundations
  - not simply an imported Western concept

How eco-ethical leadership strengthens capacity building

Individual level:

- turns knowledge into moral agency, builds ethical reasoning for trade-offs, and develops courage to advocate.

Organizational level:

- distributed leadership means frontline staff, such as Puskesmas heads and nurses, can act during shocks without waiting for central instruction. It also builds learning cultures and embeds change in institutional structures.

Systemic level:

- supports cross-sector collaboration (Kemenkes, BMKG, BNPB, local government), equity in priority setting, and public advocacy.

Technical capacity plus eco-ethical leadership producing sustained resilience.

EDUCATION INITIATIVES FOR CLIMATE AND HEALTH RESILIENCE



UNIVERSITAS GADJAH MADA

THE GREEN HEALTH CARE CHALLENGE: DO YOU DARE?

An initiative of bioethics elective module for 3rd year medical students (December 2019)

Adopting the "Health Care Without Harm" approach.

Health Care Without Harm

Leading the global movement for environmentally responsible health care

Welcome to Health Care Without Harm! Please join us as we work to transform the health sector worldwide, promoting environmental health and justice.

Module objectives:

Demonstrate ethical thinking and actions in addressing climate-change related health problems:

- Literacy and awareness on green health care movements as one of the ethical response to climate crisis.

- Basic skills to plan and deliver real actions as participation in green health care movements.



Mini Seminar & Webinar

Participants:
Invited representation from academic hospital affiliations

Main Outcome:

- FMPHN and AHS Commitment building towards green health care
- Feedbacks for students' projects
- Enthusiastic demands from academic hospitals to support and adopt students' project in their respective hospital.



- Bioetika Lingkungan 1 (SPSBE262348): 2 credits
- Bioetika Lingkungan 2 (SPSBE262349): 2 credits

membangun argumentasi etis yang sistematis, kritis, dan berbasis bukti ilmiah dalam merespon berbagai persoalan lingkungan pada tingkat lokal maupun global.

mengembangkan kemampuan merumuskan keputusan etis menggunakan prinsip pengambilan keputusan berkelanjutan, metode penilaian komparatif, perubahan paradigma lingkungan, dan pendekatan *adaptive management* serta *ecological restoration*.

Sintesis: Model UGM untuk Ketahanan Iklim & Kesehatan

Sebuah kerangka kerja yang teruji selama 13 tahun, merepresentasikan cetak biru bagi institusi kesehatan global.

Data & Teknologi

Aksi Komunitas

Kepemimpinan Kebijakan

+ =

Layanan Kesehatan Tangguh Iklim & Net Zero

NotebookLM

Operational recommendation for building capacity

- **Competency frameworks.** Define the knowledge, skills, and attitudes of eco-ethical leadership in health.
  - Knowledge would cover climate-health science and environmental ethics.
  - Skills would include ethical deliberation, systems analysis, and coalition building.
  - Attitudes would include stewardship, a justice orientation, and humility. This turns an abstract concept into something that can be taught and assessed.
- **Curriculum integration.** Integrate into health professions education and continuing professional development, ideally through case-based learning built on real local dilemmas.
- **Leadership development programs** for facility heads and district health officers that combine technical climate-health content with ethics and reflective practice.
- **Communities of practice** that connect frontline innovators so that distributed leadership has support and does not stay isolated.
- **Metrics.** Include ethical and equity indicators, not just carbon figures or the number of people trained.

Resilient health systems are built not only with infrastructure and training, but with leaders who see protecting health and protecting the planet as one responsibility.

THANK YOU

Menuju Masa Depan Keberlanjutan Bersama

Locally Rooted, Globally Respected.

Kami mengundang Anda untuk menjadi bagian dari transformasi kesehatan global:

1. **Partisipasi**: Ikuti Survei Jejak Karbon Rumah Sakit (2024).
2. **Kolaborasi**: Bergabunglah dalam Postgraduate Forum dan FORNAS JKKI (2025).



Hubungi Kami:

Grup Riset Iklim & Kesehatan

Fakultas Kedokteran, Kesehatan Masyarakat dan Keperawatan UGM

ugm.ac.id | hpm.fk@ugm.ac.id

NotebookLM