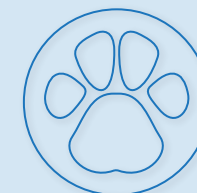


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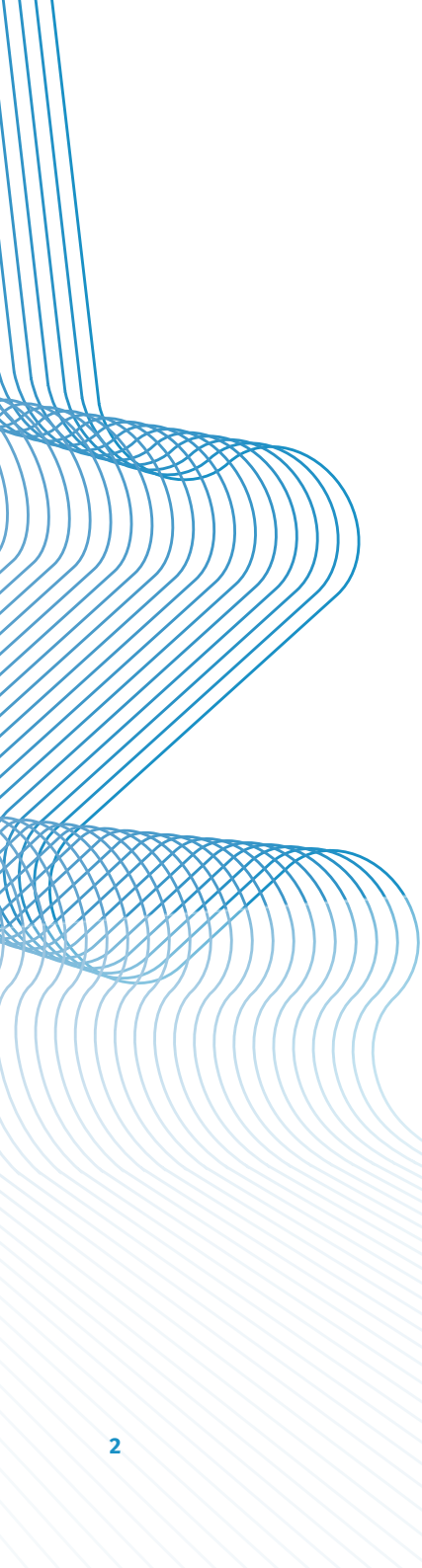
Public Health Institutes of the World

IANPHI



SURVEY RESULTS

THE ROLE OF NATIONAL PUBLIC HEALTH INSTITUTES IN CLIMATE CHANGE ADAPTATION AND MITIGATION



IANPHI conducted an online survey from April to June 2021 to better understand the current involvement of national public health institutes (NPHIs) in climate change.

This survey was answered by 43 NPHIs out of 112 that were contacted, including 110 current members of IANPHI and two future members. Their distribution by geographical area and income level was representative of the diversity of IANPHI members.

Here are the key takeaways.

⊖ A majority of countries have a national adaptation plan or strategy, which frequently includes actions with an objective of protecting health. When plans include health actions, NPHIs' contribution is frequent but not systematic. Examples of contribution to national and regional adaptation plans include:

- coordination and review
- surveillance of climate sensitive-diseases
- emergency response
- prevention
- advocacy and training

⊖ Few NPHIs are involved in national climate change mitigation strategies.

⊖ The most frequent climate-related risks identified by NPHIs were:

- vector-borne diseases
- heat-related morbidity and mortality
- air quality
- extreme weather events
- food and water scarcity

⊖ NPHIs cited collaborating with:

- health care
- agriculture
- farming and forestry
- urban planning and land use on climate change and health.

⊖ The most frequently identified stakeholders were ministries, universities and scientific agencies, and cities.

⊖ All core functions of NPHIs are already impacted by climate change. The most frequently cited are public health monitoring and surveillance, research and prevention, and health promotion.

⊖ Top climate and health priorities cited by NPHIs were to develop tools to assess vulnerability and risk for public health and the health sector, and to develop indicators of climate change impacts.

⊖ NPHIs' interests in collaboration on climate change and health depend on the geographical region. Items that were most frequently identified were indicators, advocacy, tools to support adaptation and mitigation strategies at the local level, vulnerability and risk assessments for health and the health sector, and to share examples of implementing a Planetary Health and/or One Health approach.

⊖ Only four NPHI respondents have performed a carbon footprint assessment of their organization.

BACKGROUND AND METHOD

Background

In 2020, IANPHI set up a working group on public health and climate change, whose overall objective is to promote international collaboration between NPHIs and other stakeholders and highlight NPHIs' roles in climate change adaptation and mitigation policies. Climate change adaptation refers to the process of taking actions to prepare or/and adjust to the current and expected effects of climate change. Climate change mitigation refers to the efforts to avoid and reduce the emissions of greenhouse gases into the atmosphere.

As a first step, the working group created an online survey to better understand the current involvement of NPHIs on climate change, and the possible added value of the working group. The main results of the survey are presented below.

The survey results supported the writing of the "IANPHI Roadmap for Action on Health and Climate Change", which advocates for the strengthening of NPHIs as key climate actors, and to identify priority areas of actions for IANPHI to support NPHIs in the development of their capacity.

The survey's results will also support future activities of the IANPHI Working Group on Public Health and Climate Change, including collating case studies, developing advocacy actions and monitoring progress in NPHIs' involvement in climate change policies.

Method

The survey was prepared by a subgroup of the IANPHI Working Group on Public Health and Climate Change, then reviewed and pre-tested by other group members. It was sent in April 2021 by e-mail to all IANPHI members (110 institutes from 95 countries), as well as to two institutes currently applying for membership. The answers were collected up to June 2021.

The survey's questions were divided into six parts:

1. Description of the organization (three questions)
2. National context regarding public health and adaptation to climate change (eight questions)
3. National context regarding public health and mitigation of climate change (six questions)

4. Strategy of the organization regarding public health and climate change (nine questions)
5. NPHI functions and climate change (two questions)
6. NPHIs common goals regarding public health and climate change (two questions)

Additional information on the geographical area and country income of the respondents were added by the working group.

Answers to the 23 closed questions were analyzed with the software R, and results are presented aggregated per geographical area and income area. Answers to the seven open-ended questions were analyzed using the software MAXQDA, and visualizations were created using Microsoft Excel.

RESULTS

DESCRIPTION OF THE RESPONDENTS

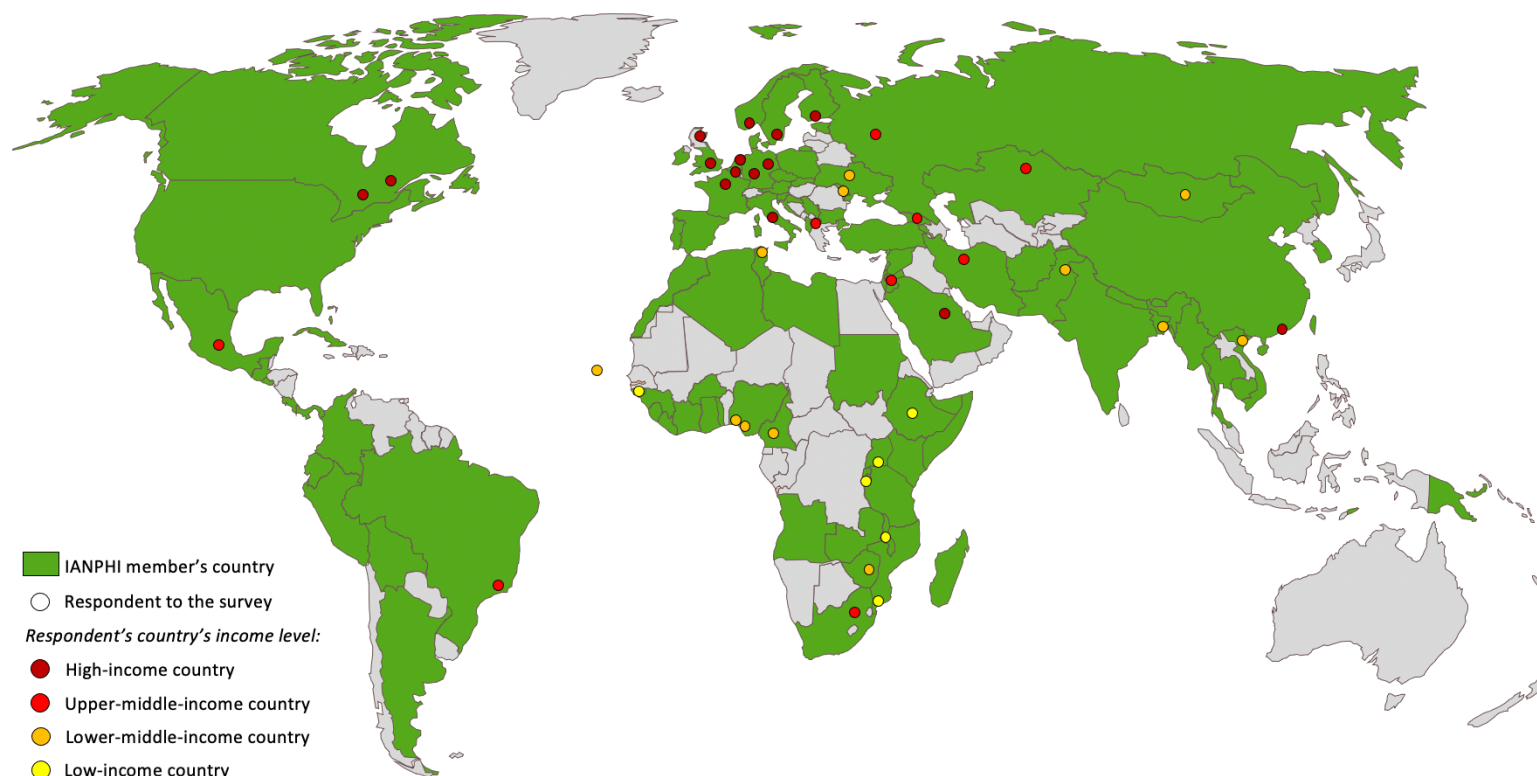
Among IANPHI members, 43 NPHIs (Fig. 1) answered the survey providing geographic and income representativeness of the membership in terms of regional areas and country income category (Table 1). The response rate was 38% (43/112 – 110 current members and two future members).

The respondents had on average six core functions (min 1; max 9). Research, public health training and education, and prevention and health promotion were the most frequently reported core functions.

Research was most frequently reported in low and lower middle-income countries. Risk assessment was more frequently reported in high-income countries.

Respondents from upper-middle-income countries were less frequently involved in emergency response and preparedness and in public health monitoring and surveillance than the other respondents (Table 2).

Fig 1. IANPHI member countries and survey respondents



RESULTS

DESCRIPTION OF THE RESPONDENTS

<i>Regional areas</i>	<i>Survey respondents</i>	<i>IANPHI members</i>
<i>Africa</i>	30%	34%
<i>America</i>	9%	14%
<i>Asia</i>	21%	21%
<i>Europe</i>	40%	31%

<i>Country income category</i>	<i>Survey respondents</i>	<i>IANPHI members</i>
<i>High income</i>	37%	29%
<i>Upper middle income</i>	21%	23%
<i>Lower middle income</i>	28%	32%
<i>Low income</i>	14%	16%

Table 1. Regional areas and country income category representation: comparison between survey respondents and IANPHI members

	<i>Low income</i>	<i>Lower middle income</i>	<i>Upper middle income</i>	<i>High income</i>	<i>Total</i>
Research	83	75	67	69	72
Public health training and education	67	83	56	56	65
Prevention and health promotion	33	67	44	81	63
Emergency response and preparedness	67	58	33	75	60
Public health monitoring and surveillance	67	58	33	75	60
Evaluation and analysis of health status	33	58	56	63	56
Risk assessment	33	58	33	69	53
Laboratory activities	33	58	33	63	51
Public health regulation and enforcement	17	33	11	31	26

Table 2. Percentage of respondents with the above core functions, total and by country income

RESULTS

NATIONAL CONTEXT REGARDING PUBLIC HEALTH AND ADAPTATION TO CLIMATE CHANGE

Contribution to national adaptation plans

Thirty-three (77%) respondents reported that their country has developed a national climate adaptation plan or strategy, three reported no national climate adaptation plan, and seven were uncertain. A majority (85%, N=28) of those plans included actions, guidance or programs on health and climate change. A majority of the plans (67% N=22) received contributions from NPHIs.

When plans included health actions (28 plans), NPHI contribution was frequent (21 countries, 75%) but not systematic (four NPHI (14%) not associated, and three (11% uncertain) (NB: one country did not answer this question).

Examples of NPHIs contribution to national adaptation plans included:

1. Strategic planning, e.g. coordination of a health working group, setting of health priorities on climate change health adaptation, introduction of a One Health approach in the plan, review of the plan, capacity-building

2. Emergency response, e.g., early warning systems on heat waves, vector-borne diseases
3. Production of data and knowledge, e.g., studies on extreme heat, surveillance of vector-borne diseases, creation of indicators of climate change, spatial database
4. Health prevention and promotion, e.g., several actions to prevent the impacts of extreme heat
5. Communication, e.g., dedicated website, development of educative materials

In addition to a national adaptation plan, 17 NPHIs (40%) also reported the existence of a specific health national adaptation plan. Examples of contribution to specific health adaptation plans were similar to examples of contribution to general adaptation plans (Table 3).

The open-ended questions provided an opportunity for NPHIs to provide examples of actions they are responsible for within their country's national adaptation plan or strategy. Among the NPHIs that answered

those open-ended questions, 27% contributed to the adaptation plan, 14% had a role in emergency and preparedness response, and 14% conducted research activities.

Contribution to regional adaptation plans

The survey showed that 18 (42%) NPHIs contribute to regional adaptation plans, mostly in Americas and Asia. A majority of those also contributed to national adaptation plans, but three NPHIs only contributed to regional plans. Examples of contribution to the regional adaptation were similar to the contribution to national adaptation plans, with a strong focus on surveillance of climate sensitive diseases, response to extreme heat, vulnerability assessment and communication.

Among the NPHIs that answered the open-ended question on regional adaptation plans, 27% contributed to the adaptation plan, 15% supported regional and local agencies, 15% had a role in surveillance and 12% had a role in emergency preparedness and response.

RESULTS

NATIONAL CONTEXT REGARDING PUBLIC HEALTH AND ADAPTATION TO CLIMATE CHANGE

Regional area	% of countries with a national adaptation plan/strategy			Among the countries with a national adaptation plan/strategy, % of plans including health			Among the countries with a national adaptation plan/strategy, % of NPHIs contributing to the plan		
	Yes % (N)	No % (N)	Uncertain % (N)	Yes % (N)	No % (N)	Uncertain % (N)	Yes % (N)	No % (N)	Uncertain % (N)
Africa	69 (9)	0	31 (4)	78 (7)	11 (1)	11 (1)	33 (3)	33 (3)	22 (2)
America	75 (3)	0	25 (1)	100 (3)	0	0	100 (3)	0	0
Asia	67 (6)	11 (1)	22 (2)	100 (6)	0	0	67 (4)	16 (1)	16 (1)
Europe	88 (15)	12 (2)	0	80 (12)	7 (1)	13 (2)	80 (12)	13 (2)	7 (1)
Country income category	Yes % (N)	No % (N)	Uncertain % (N)	Yes % (N)	No % (N)	Uncertain % (N)	Yes % (N)	No % (N)	Uncertain % (N)
Low income	67 (4)	0	17 (2)	75 (3)	25 (1)	0	50 (2)	50 (2)	0
Lower middle income	75 (9)	17 (2)	8 (1)	78 (7)	11 (1)	11 (1)	33 (3)	44 (4)	11 (1)
Upper middle income	56 (5)	11 (1)	33 (3)	100 (5)	0	0	80 (4)	20 (1)	
High income	94 (15)	6 (1)	0	87 (13)	0	13 (2)	87 (13)	7 (1)	7 (1)

Table 3 . Percentage and number of countries with a national adaptation plan according to NPHI per area, existence of actions, guidance or programs on health and climate change in the plans, and contribution of the NPHIs, by geographical area, and income

RESULTS

NATIONAL CONTEXT REGARDING PUBLIC HEALTH AND MITIGATION OF CLIMATE CHANGE

Contribution to national mitigation strategies

A majority of NPHIs reported a national mitigation plan (72%, 31 countries), more frequently in high-income countries. Only 45% of those plans included evaluation of the health positive or negative impacts, with less inclusion of health in high-income countries, and in Europe. Notably, 32% of NPHIs were uncertain about the presence of a health chapter in the mitigation strategy (Table 4).

Among the examples of contribution to mitigation strategies, NPHIs cited:

- Estimation of the carbon footprint of the health care sector
- Co-benefits through air pollution
- Impact assessment of mitigation actions

- Several actions that are contributing to adaptation (similar to those described in adaptation plans)

Among the NPHIs that provided examples of actions they were responsible for within their country's national mitigation plan or strategy, 19% had a role in emergency and preparedness response, 14% conducted research activities, and 14% contributed to surveillance efforts.

Fewer NPHIs reported contributing to regional mitigation strategies (11, 26%) vs. those that do not (22, 51%) or were uncertain (10, 23%). Their contributions were in fact mostly adaptation, with some mention of the health impacts of air pollution (but based on very few responses).

Regional area	% of countries with a national mitigation strategy			Among the countries with mitigation strategy, % including health			Among the countries with mitigation strategy, % of NPHIs contributing to the plan		
	Yes % (N)	No % (N)	Uncertain % (N)	Yes % (N)	No % (N)	Uncertain % (N)	Yes % (N)	No % (N)	Uncertain % (N)
Africa	62 (8)	8 (1)	31 (4)	63 (5)	0	37 (3)	25 (2)	50 (4)	12 (1)
America	75 (3)	0	21 (1)	33 (1)	33 (1)	33 (1)	0	33 (2)	66 (1)
Asia	67 (6)	11 (1)	22 (2)	50 (3)	17 (1)	33 (2)	33 (2)	33 (2)	33 (2)
Europe	82 (14)	12 (2)	6 (1)	36 (5)	36 (5)	28 (4)	43 (6)	43 (6)	7 (1)
Country income category	Yes % (N)	No % (N)	Uncertain % (N)	Yes % (N)	No % (N)	Uncertain % (N)	Yes % (N)	No % (N)	Uncertain % (N)
Low income	50 (3)	17 (1)	33 (2)	66 (2)	33 (1)	0	33 (1)	33 (1)	33 (1)
Lower middle income	75 (9)	17 (2)	8 (1)	56 (5)	11 (1)	33 (3)	33 (3)	44 (4)	11 (1)
Upper middle income	56 (5)	11 (1)	33 (3)	80 (4)	0	20 (1)	20 (1)	40 (2)	40 (2)
High income	88 (14)	0	12 (2)	21 (3)	43 (6)	36 (5)	36 (5)	50 (7)	7 (1)

Table 4. Percentage and number of countries with a national mitigation strategy according to NPHI per area, existence of evaluation of the health impacts, and contribution of the NPHIs, by geographical area, and income

RESULTS

NPHIS' STRATEGY ON PUBLIC HEALTH AND CLIMATE CHANGE

A majority of NPHIs do not have a focal point on climate change (20 (46%), vs. 19 (44%) yes and 4 (9%) uncertain). Of 30 NPHIs, 70% do not have a formal statement on climate change and health (8 (19%) yes, 5 (11%) uncertain). Yet, 21 (49%) NPHIs consider that climate change is an institutional priority (19 (44%) no, 3 (7%) uncertain), mostly in Europe and Asia.

Carbon footprint assessment

Only four NPHIs have completed their carbon footprint assessment, three in Europe and one in the Americas.

Risks prioritized per NPHIs

In an open-ended question, NPHIs had the opportunity to share the three main health risks identified through a national or regional assessment of the health impacts of climate change. The most cited risk by NPHIs that answered the question was vector-borne diseases, followed by heat-related morbidity and mortality (27%), air quality (19%), extreme weather events (11%), and food and water scarcity (8%).

Stakeholders and sectors

NPHIs reported collaborating with ministries (79% (34)), universities and scientific agencies (51% (22)), and cities (42% (18)). Collaboration with universities is less frequent in Africa, and collaboration with individuals/communities and with the health care sector was less frequently reported in Europe and in high-income countries (Table 5).

NPHIs most frequently collaborate with the health care sector (quoted 29 times), agriculture, farming and forestry (quoted 20 times), and urban planning and land use (quoted 16 times). NPHIs collaborate with a wider range of sectors in Europe and in high-income countries. Some sectors are only quoted by high-income countries (transport, housing, biodiversity, land use, urban planning) (Table 6).

RESULTS

NPHIS' STRATEGY

ON PUBLIC HEALTH

AND CLIMATE CHANGE

Regional area	Associations/ NGOs % (N)	Cities and municipalities/local authorities % (N)	Health care sector (hospital districts, hospitals, health care centers, nursing homes, elderly care...) % (N)	Individuals/ Communities % (N)	International organization % (N)	Ministries (health, environment, forestry and agriculture, transport...) % (N)	Universities/ National scientific agencies % (N)
Africa	38 (5)	23 (3)	54 (7)	8 (1)	38 (5)	85 (11)	23 (3)
America	50 (2)	75 (3)	25 (1)	0	50 (2)	50 (2)	100 (4)
Asia	22 (2)	44 (4)	56 (5)	11 (1)	56 (5)	67 (6)	44 (4)
Europe	29 (5)	47 (8)	24 (4)	0	24 (4)	88 (15)	65 (11)
Country income category	Associations/ NGOs % (N)	Cities and municipalities/local authorities % (N)	Health care sector (hospital districts, hospitals, health care centers, nursing homes, elderly care...) % (N)	Individuals/ Communities % (N)	International organization % (N)	Ministries (health, environment, forestry and agriculture, transport...) % (N)	Universities/ National scientific agencies % (N)
Low income	83 (5)	17 (1)	50 (3)	17 (1)	50 (3)	83 (5)	50 (3)
Lower middle income	17 (2)	33 (4)	67 (8)	8 (1)	33 (4)	75 (9)	25 (3)
Upper middle income	22 (2)	56 (5)	44 (4)	0	44 (4)	44 (4)	33 (3)
High income	31 (5)	50 (8)	13 (2)	0	31 (5)	100 (16)	81 (13)

Table 5. Reported collaboration between NPHIs and stakeholders on climate change and health

RESULTS

NPHIS' STRATEGY ON PUBLIC HEALTH AND CLIMATE CHANGE

<i>Regional area</i>	<i>Agriculture, Farming, Forestry % (N)</i>	<i>Biodiversity % (N)</i>	<i>Energy % (N)</i>	<i>Health care % (N)</i>	<i>Housing % (N)</i>	<i>Transport % (N)</i>	<i>Urban planning, Land use % (N)</i>
Africa	54 (7)	0	8 (1)	54 (7)	0	8 (1)	8 (1)
America	50 (2)	75 (3)	0	75 (3)	25 (1)	25 (1)	75 (3)
Asia	33 (3)	0	11 (1)	67 (6)	0	0	11 (1)
Europe	47 (8)	41 (7)	18 (3)	76 (13)	47 (8)	41 (1)	11 (65)
<i>Country income category</i>	<i>Agriculture, Farming, Forestry % (N)</i>	<i>Biodiversity % (N)</i>	<i>Energy % (N)</i>	<i>Health care % (N)</i>	<i>Housing % (N)</i>	<i>Transport % (N)</i>	<i>Urban planning, Land use % (N)</i>
Low income	67 (4)	0	17 (1)	50 (3)	0	17 (1)	17 (1)
Lower middle income	25 (3)	8 (1)	0	67 (8)	0	0	17 (2)
Upper middle income	33 (3)	11 (1)	0	67 (6)	0	0	33 (3)
High income	63 (10)	50 (8)	25 (4)	75 (12)	56 (9)	50 (8)	63 (10)

Table 6. Collaboration with the above sectors on climate change and health

RESULTS

NPHIs' FUNCTIONS AND CLIMATE CHANGE

NPHIs were asked to report if some of their core functions were already impacted by climate change. All core functions were listed, the most frequently quoted being public health monitoring and surveillance (25), research (21) and prevention and health

promotion (20). The core functions that mostly need to be reinforced because of climate change are risk assessment (26), public health monitoring and surveillance (26), research (21) and public health monitoring and surveillance (19) (Table 7).

		Emergency response and preparedness	Evaluation and analysis of health status	Laboratory activities	Prevention and health promotion	Public health monitoring and surveillance	Public health regulation and enforcement	Public health training and education	Research	Risk assessment
High income	Core function	12	10	10	13	12	5	9	11	11
	Already impacted	5	2	2	11	12	1	2	8	4
	Needs for strengthening	7	2	1	10	10	2	3	8	9
Upper middle income	Core function	3	5	3	4	3	1	5	6	3
	Already impacted	2	2	2	2	2	0	3	5	3
	Needs for strengthening	2	4	1	3	4	2	4	2	5
Lower middle income	Core function	7	7	7	8	7	4	10	9	7
	Already impacted	4	3	2	5	7	1	5	5	4
	Needs for strengthening	4	4	3	4	7	2	6	7	7
Low income	Core function	4	2	2	2	4	1	4	5	2
	Already impacted	3	1	2	2	3	0	3	3	1
	Needs for strengthening	4	4	3	2	5	1	3	4	5

Table 7. Number of NPHIs with the above core functions, with the core functions already impacted, and wishing to strengthen the core functions – by country income area

RESULTS

NPHIs' COMMON GOALS FOR PUBLIC HEALTH AND CLIMATE CHANGE

The most frequent priorities for NPHIs were developing tools to assess vulnerability and risk assessments (24) for health and the health sector, and to develop indicators of the health impacts of climate change (25).

Developing indicators was also the most favored topic for collaboration within IANPHI (27).

Actions that were frequently both a priority for NPHIs and where collaboration was seen as relevant include:

- Develop common indicators of the health impacts of climate change
- Advocate for the integration of climate change issues in public health practice
- Develop tools to link climate mitigation and adaptation with promotion of health and social equity
- Develop tools to support adaptation and mitigation strategies at the community level
- Vulnerability and risk assessments for health and the health sector

Actions that were less frequently a priority for NPHIs but raised an interest for collaboration included:

- Incorporate climate change issues in regional and local public health programs
- Share examples of implementing a Planetary Health and/or One Health approach for health

Research was not a priority nor raised interest for collaboration (Table 8).

Some disparities were observed between regions and income levels. For instance, the inclusion of health objectives in regional and local actions plans attracted more interest for collaboration in low-income countries and in Africa. Sharing examples of a Planetary Health and/or One Health approach attracted interest in low and high-income countries (Table 9).

RESULTS

NPHIs' COMMON GOALS FOR PUBLIC HEALTH AND CLIMATE CHANGE

	<i>High income</i>		<i>Upper middle income</i>		<i>Lower middle income</i>		<i>Low middle income</i>	
	<i>Priorities</i>	<i>Collaboration</i>	<i>Priorities</i>	<i>Collaboration</i>	<i>Priorities</i>	<i>Collaboration</i>	<i>Priorities</i>	<i>Collaboration</i>
Vulnerability and risk assessments for health and the health sector	9	6	4	1	7	6	5	2
Develop common indicators of the health impacts of climate change	10	9	4	6	7	10	3	2
Advocate for integration of climate change issues in public health practice	6	1	3	3	5	7	2	2
Develop tools to link climate mitigation and adaptation with promotion of health and social equity	6	7	5	3	4	2	0	2
Develop tools to support adaptation and mitigation strategies at the community level	6	3	1	4	5	2	3	2
Assess and evaluate the health impacts of national mitigation strategies	3	3	3	2	4	4	3	2
Evaluate and improve national adaptation plans	4	2	3	2	3	2	1	2
Develop Health National Action Plans (HNAPS)	3	5	1	1	5	2	1	1
Include climate change issues in regional and local public health programs	2	5	3	3	4	5	1	2
Share examples of implementing a planetary health and/or one health approach for health	2	8	3	2	4	3	0	3
Include health objectives in regional and local environmental action plans (health and health determining sectors)	1	1	2	2	2	3	1	4
Research	1	0	0	0	0	0	0	0

Table 8. Number of NPHIs with the above priorities and wish for collaboration within IANPHI, per country income category

RESULTS

NPHIs' COMMON GOALS FOR PUBLIC HEALTH AND CLIMATE CHANGE

	<i>Africa</i>		<i>America</i>		<i>Asia</i>		<i>Europe</i>	
	<i>Priorities</i>	<i>Collaboration</i>	<i>Priorities</i>	<i>Collaboration</i>	<i>Priorities</i>	<i>Collaboration</i>	<i>Priorities</i>	<i>Collaboration</i>
Vulnerability and risk assessments for health and the health sector	0	4	0	1	3	3	11	7
Develop common indicators of the health impacts of climate change	6	7	3	2	5	7	10	11
Advocate for integration of climate change issues in public health practice	6	7	1	0	4	3	5	3
Develop tools to link climate mitigation and adaptation with promotion of health and social equity	2	2	3	2	2	2	8	8
Develop tools to support adaptation and mitigation strategies at the community level	5	2	2	2	3	4	5	3
Assess and evaluate the health impacts of national mitigation strategies	6	4	0	1	3	3	4	3
Evaluate and improve national adaptation plans	3	3	1	1	3	2	4	2
Develop Health National Action Plans (HNAPS)	4	4	0	2	2	3	4	2
Include climate change issues in regional and local public health programs	3	6	1	2	3	3	3	4
Share examples of implementing a planetary health and/or one health approach for health	0	6	0	2	2	1	3	7
Include health objectives in regional and local environmental action plans (health and health determining sectors)	2	6	0	1	3	1	1	2
Research	0	0	1	0	0	0	0	0

Table 9. Number of NPHIs with the above priorities and wish for collaboration within IANPHI, per area

CONCLUSION

NPHIs reported mapping, monitoring and addressing the physical and mental health impacts of climate change.

Yet, few NPHIs identify themselves as key climate actors and their involvement in their countries' national and regional climate adaptation and mitigation policies is rather limited. Only a few NPHIs reported receiving the appropriate resources to develop robust health and climate programs.

NPHIs have an important role to play in supporting an intersectoral approach of climate change and health and in international collaboration.

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