Ministero della Salute

Ca' Foscari University of Venice

Global Strategy for action to reduce the effects of Climate and Environmental Factors on Global Health. The contribution of the experts through the Delphi method.

Executive Report 05/11/2017

Human health and the health of our planet are strictly interconnected. In preparation for the G7 ministerial meeting, the Italian Presidency has promoted a reflection on the actions to be taken to globally address the effects of climate and environmental factors on the health of the world's population.

The G7 countries' delegations and a group of world experts have been involved to define the priorities of intervention under the guidance of the Italian Presidency team with the support of the University Ca' Foscari of Venice.

The **Delphi method** is a systematic revision model based on the remote interaction of a group of experts, to verify if there is consensus on a given subject. It is based on the assumption that, if a group of experts describe a phenomenon in a homogenous way, it is very likely that the phenomenon is as described.

The Delphi method involves the group of experts in two or more consecutive rounds. In this project, more than **700 international experts were approached** in each of the two rounds involved. 188 responses were collected in the first round, and 113 in the second.

THE FIRST DELPHI ROUND

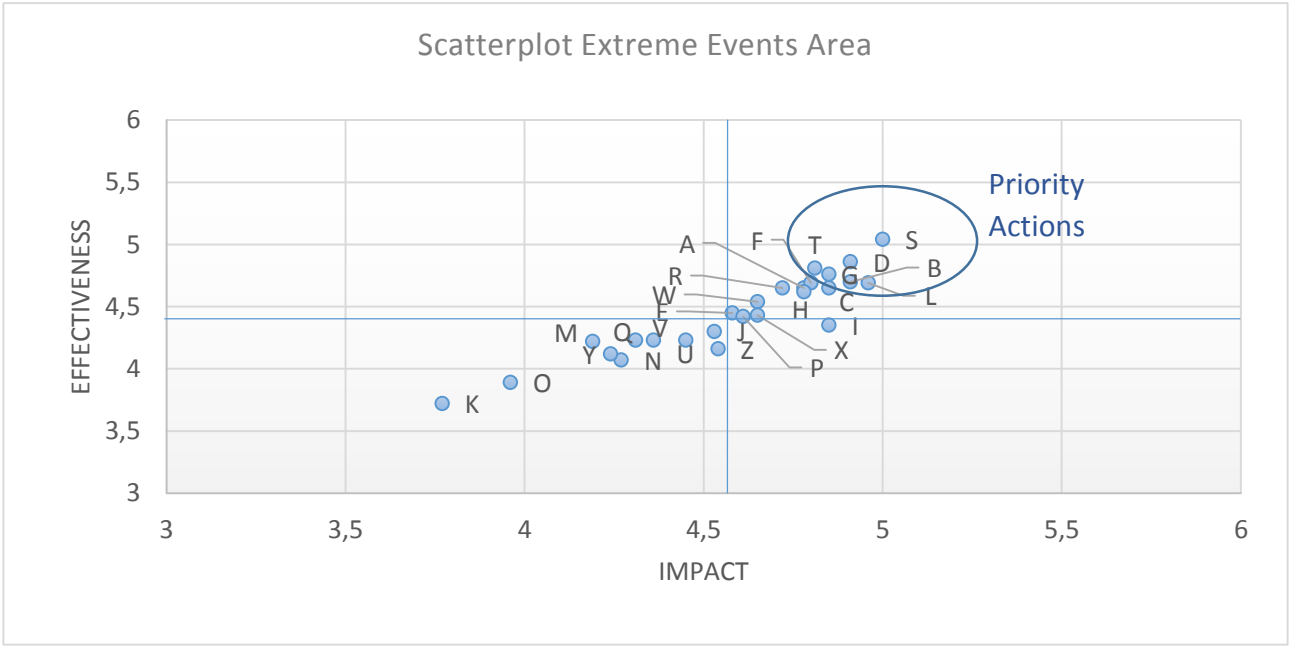
In the first months of the G7 Italian Presidency, a **matrix** was produced to summarize the relations between the main climate drivers and the possible consequences on health, to then identify potential actions to reduce the effects and/or strengthen the adaptation, and consequently mitigate the negative influence on health.

This tool has been used to categorize the potential impacts and actions, and has been divided into 8 areas:

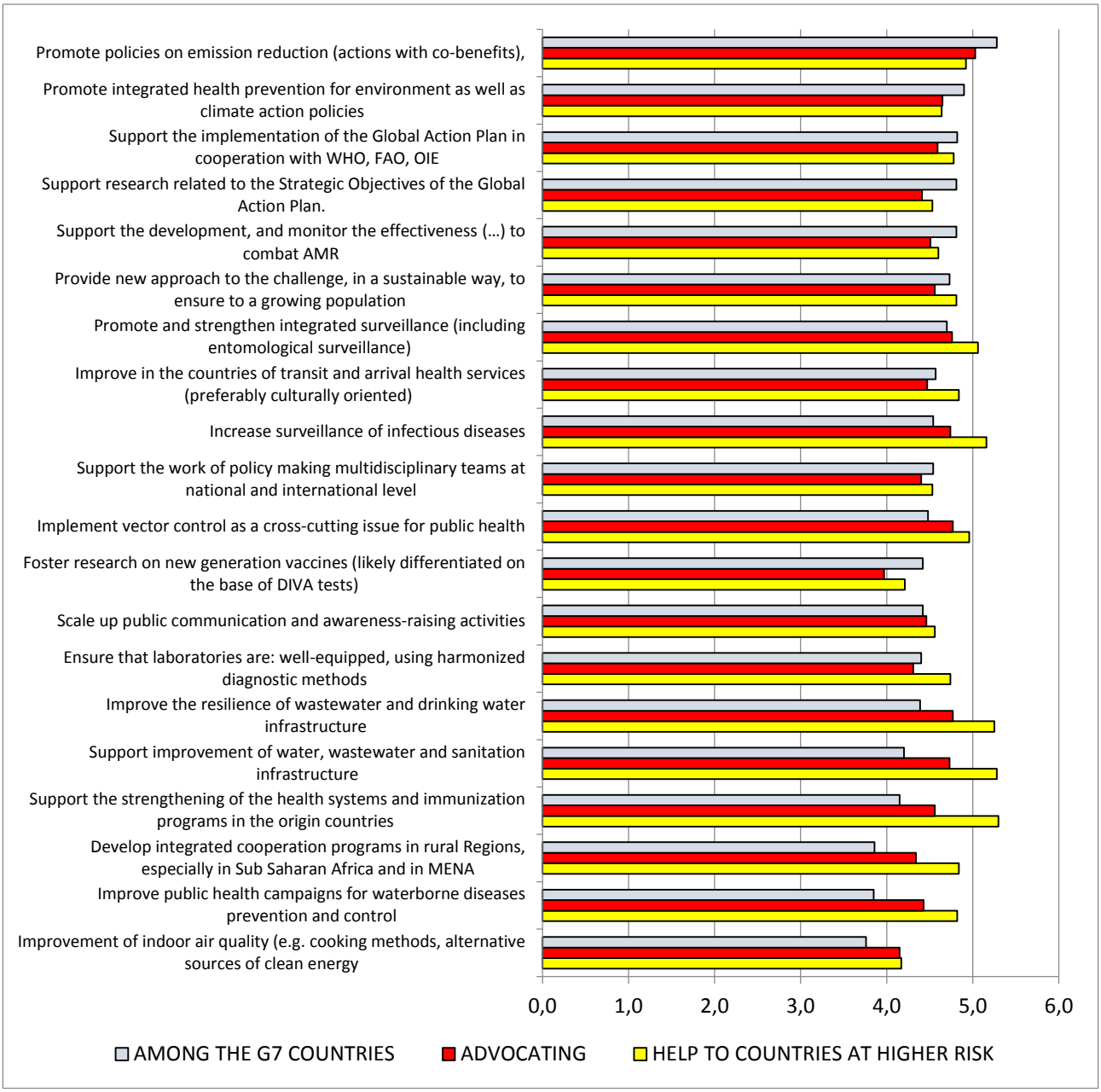
- Extreme events, including floods, droughts, storms and heatwaves;
- Health effects of air pollution related to climate and environmental factors;
- Vector borne diseases;
- Water access and waterborne diseases;
- Food system and nutrition;
- Animal health at the animal/human interface;
- Migrant's flows;
- Antimicrobial resistance.

The questionnaire for the first Delphi round was based on the matrix defined in the preliminary phase by a smaller group of experts and delegates from G7 countries and international organizations, and focused on the actions to identify those homogenously considered as priority to address the challenge of climate and environmental factors and their impact on health. Actions have been judged on two criteria: **potential impact** (the importance of health outcome, the population potentially involved, the health co-benefits) and **potential effectiveness** (the theoretical efficacy, the strength of evidence, the feasibility).

For each area, a **scatterplot** was produced to show the relation between the means of the scores on the two criteria (Impact and Effectiveness) and easily identify those actions that the experts consider both effective and supported by robust scientific evidence, as shown in the example below for the Extreme Events Area.



THE SECOND DELPHI ROUND

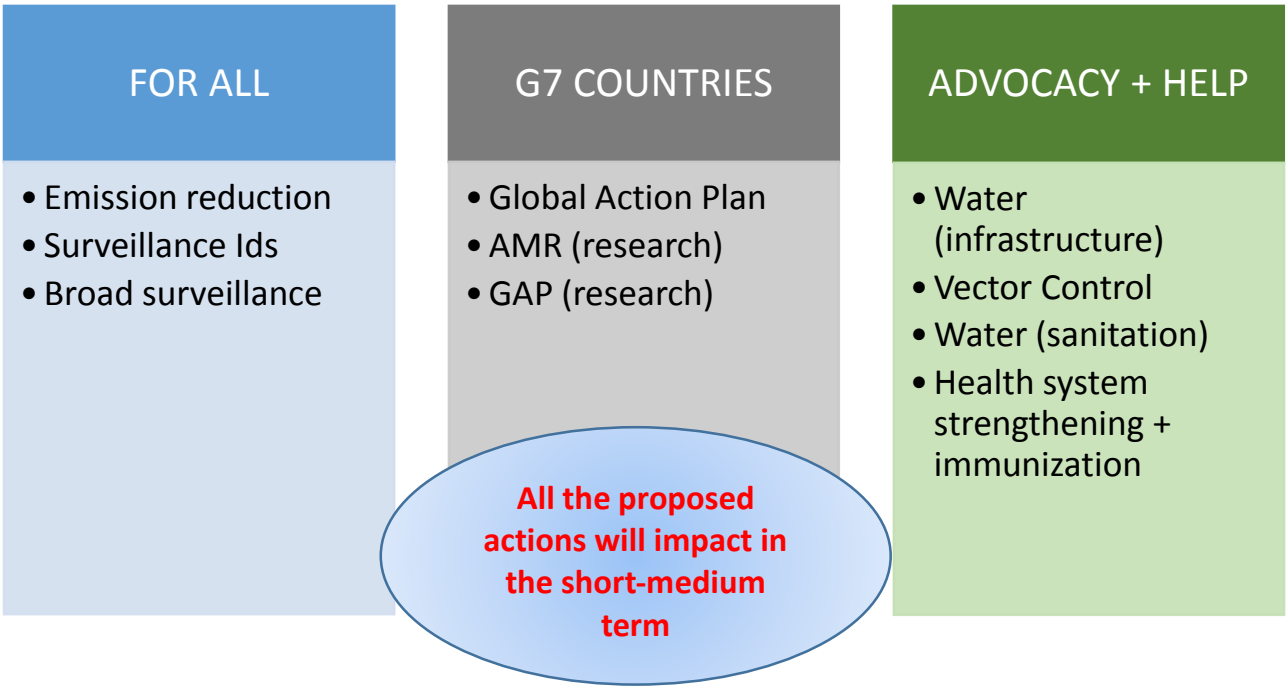


The analysis of the results of the first round has allowed to produce a list of the 20 actions considered to have the highest Impact and Effectiveness.

In relation to the **20 priority actions**, the experts were asked to judge if the G7 countries should, as a priority, implement these actions themselves, or advocate for the implementation of the actions in some specific areas of the world which are more exposed, or help directly the countries at higher risk to implement them.

As shown in the graph above, experts suggest that some actions should be implemented in the G7 countries, whilst for other actions G7 countries should advocate or help directly the countries at higher risk (the correlation between the data from these two criteria is very high).

SUMMARY OF THE RESULTS



The experts suggest how G7 countries should primarily promote internally and with advocacy and support, actions of mitigation, with policies of **emission reduction**, whose co-benefits on health are widely reported in the literature. On the other hand, the G7 countries should strengthen and promote/**support the surveillance**, both of infectious diseases, and in general of surveillance connected to climate and environmental factors.

Among the G7 countries, experts suggest to work primarily on the **Global Action Plan on Antimicrobial Resistance (AMR)**, both on its implementation in cooperation with international organizations, and supporting the research for its development. Research should focus on evidence-based strategies, tools and interventions to combat AMR in relation to climate and environmental factors (not much explored so far).

Finally, G7 countries should commit primarily through advocacy and direct support to the countries at higher risk on **water**-related issues, by both enhancing infrastructures and guaranteeing their security. Other priority actions in terms of help are the **vector control** of pathogens and the **strengthening of health systems** (in particular for countries with migration flows – outbound or in transit), also specifically to **immunization** programs.

The experts were also asked to choose the time frame for each of the 20 actions, among short (1-7 years), medium (by 2030 – time frame of the Sustainable Development Objectives), and long (beyond 2030), and they chose quite homogenously a short-medium time frame for all actions.