REQUEST FOR PROPOSALS

CONSULTANT FOR STUDY ON NUTRITION SENSITIVE CLIMATE RISK ON VARIOUS FOOD GROUPS IN INDONESIA

Issued by

The Global Alliance for Improved Nutrition (GAIN)

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I. PROJECT BACKGROUND AND SCOPE OF WORK

1. ABOUT GAIN

The Global Alliance for Improved Nutrition (GAIN) is a Swiss-based foundation launched at the UN in 2002 to tackle the human suffering caused by malnutrition. Working with both governments and businesses, we aim to transform food systems so that they deliver more nutritious food for all people.

At GAIN, we believe that everyone in the world should have access to nutritious and safe food. We work to understand and deliver specific solutions to the daily challenge of food insecurity faced by poor people. By understanding that there is no “one-size-fits-all” model, we develop alliances and build tailored programmes, using a variety of flexible models and approaches.

We build alliances between governments, local and global businesses, and civil society to deliver sustainable improvements at scale. We are part of a global network of partners working together to create sustainable solutions to malnutrition. Through alliances, we provide technical, financial and policy support to key participants in the food system. We use specific learning, evidence of impact, and results of projects and programmes to shape and influence the actions of others.

Headquartered in Geneva, Switzerland, GAIN has representative offices in Denmark, The Netherlands, the United Kingdom, and the United States. In addition, we have country offices in Bangladesh, Ethiopia, India, Indonesia, Kenya, Mozambique, Nigeria, Pakistan, and Tanzania. Programmes and projects are carried out in a variety of other countries, particularly in Africa and Asia.

2. BACKGROUND

Climate change impacts nutrients in crops. The years with the largest annual carbon dioxide growth tend to be associated with the strongest El Niño (the warm phase of a natural climate pattern) causing **increased land and ocean temperatures and an expansion of global drought areas** (NOAA, 2025).

There are two main pathways through which climate change affects nutrition. The first is due to **elevated CO_2** and the second is due to **climate variability** and its impacts such as increased temperatures, altered rainfall patterns, droughts, and floods.

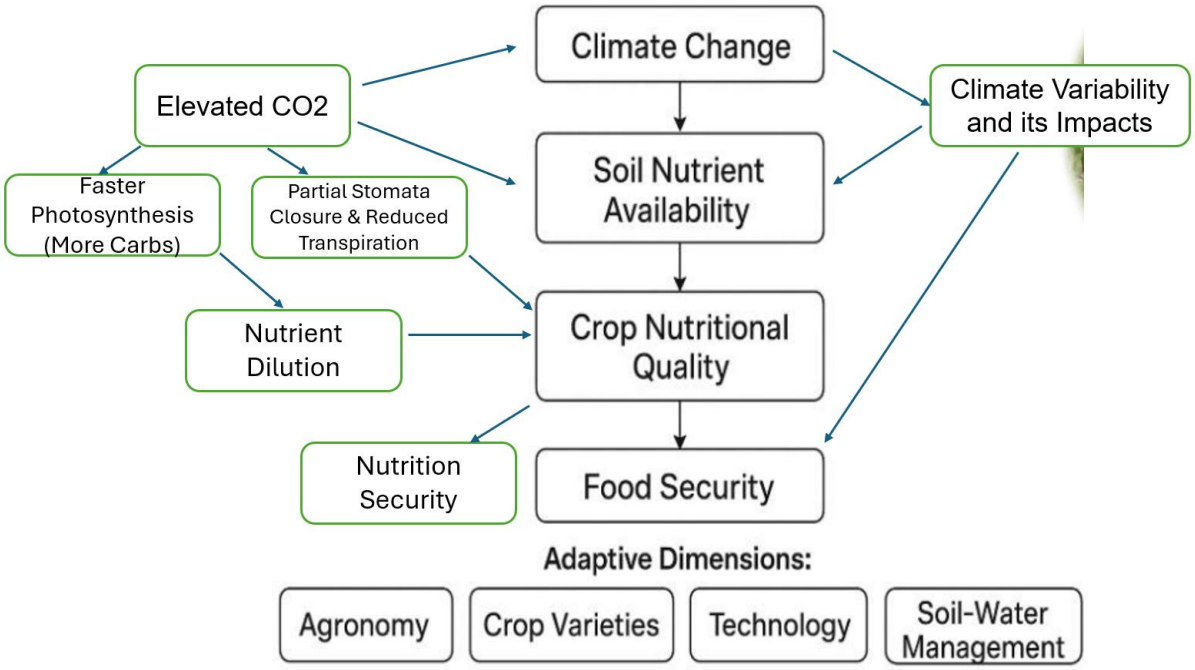

Figure 1 Framework on climate and crop nutrition (adapted from Suryadi 2025)

Rising CO_2 levels affect the content of essential nutrients in crops. One study found that protein concentrations in wheat, rice, barley, and potato tubers decreased by **10-15%**. Crops also lost vital minerals such as calcium, magnesium, phosphorus, iron, and zinc (Moores 2025). This can create a high-calories but nutrient-poor diet, leading to great risk for nutrient deficiencies. In the long term, this condition can increase the risk of obesity and Type 2 diabetes, especially in populations already vulnerable to non-communicable diseases (SEB, 2025).

Climate change is also increasingly affecting the nutritional content and structural integrity of horticultural crops. Climate change impacts crop nutrition and increases fruit cracking, with pivotal transcription factors in stress response (Manzoor et al 2024). The study underscores the significant threat posed by climate change to the horticultural sector, particularly in exacerbating fruit cracking and compromising nutritional value.

Tigchellaar et al (2024) found that climate hazard scores are generally highest for vitamin B-12 and calcium, which have large contributions from the animal-source foods that are connected only to temperature extremes. Globally, **75% of calcium, 30% of folate, 39% of iron, 68% of vitamin A, 79% of vitamin B12, and 54% of energy production** is projected to face climate extremes at least every other year by the middle of the century (Tigchellaar et al 2024).

Tigchellaar et al (2024) found that Indonesians are often deficient in four micronutrients; **calcium, folate, iron, and vitamin A**. Deficiencies in zinc and vitamin B are also common. Abovementioned micronutrients are abundant in **legumes** (mung beans, sesame seeds), **horticulture crops** (papaya, carrot, oranges), and **leafy green vegetables** (spinach, moringa leaves). Climate hazards (temperature, precipitation and both) are concentrated in specific food groups, which increases the cost of healthy diets. However, specific studies on details for climate change impacts to those micronutrients production remain very limited.

Micronutrient deficiencies can cause visible and dangerous health conditions, but they can also lead to less clinically notable reductions in energy level, mental clarity and overall capacity. Addressing micronutrient deficiency is important to reach target anaemia reduction on women and children; and reduce malnutrition.

The lack of evidence on climate impacts to micronutrients led to absence of nutrition integration in the climate resilience development policy, in Indonesia (I-CAN, 2024). Nutrition integration in climate policies is important to address the nutritional and climate challenges, and food availability, in order to achieve climate, food and nutrition outcomes. This will also support health and climate integration in National Mid-Term Development Plan (RPJMN).

A study on climate change impacts to nutritional content of staple foods and horticulture crops is also important to support decision-making related to fortification and biofortification programs in the RPJMN 2030-2034.

This study will be conducted in collaboration with Ministry of National Development Planning (Bappenas) to support nutrition integration in climate policies in Indonesia. This study will provide evidence for raising awareness of integrating nutrition into Climate Resilience Development (PBI) () policy and will be followed by subsequent studies to support readiness for integration into the RPJMN 2030-2034.

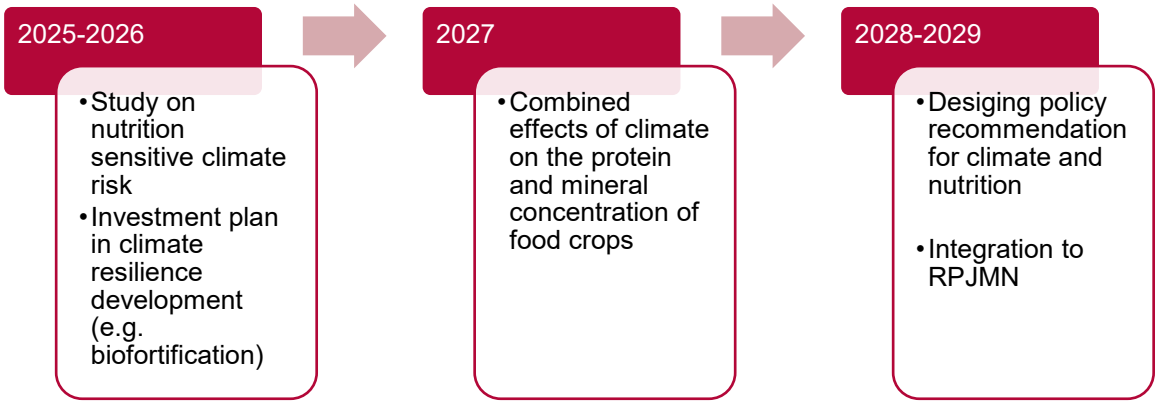

Figure 2 Milestones Process for Integrating Nutrition into PBI Policy and RPJMN

3. SCOPE OF STUDY

To measure magnitude of climate impact, its spatial location, and its temporal projection, using the PBI approach.

RESEARCH QUESTIONS

How does climate change affect the quantity of nutritious/quality food and the individual nutritional status in Indonesia by 2050?

1. How does climate change (temperature, rainfall, or a combination of both) affect nutrient supply and deficiency from staple foods/grains in Indonesia?
2. How does climate change affect nutrient supply and deficiency from legumes, horticulture crops, and other selected food groups in Indonesia?
3. What are the recommendations for PBI policy?

METHODS

- Using the PBI approach as the core analytical and methodological framework
- Scientific modelling of climate change impacts on food systems and nutrient supply, based on relevant scientific literature, including Tigchelaar et al. (2024). Study design includes kick-off meeting with key

stakeholders, series of FGD with Bappenas and other relevant stakeholders, and field measurement to selected locations

- Policy contextualization to link scientific findings with national development planning needs.

The consultant may propose specific food groups[1] based on data/literature availability; and continue to calculate average nutrient supply from those foods in Indonesia and population-average nutrient inadequacies.

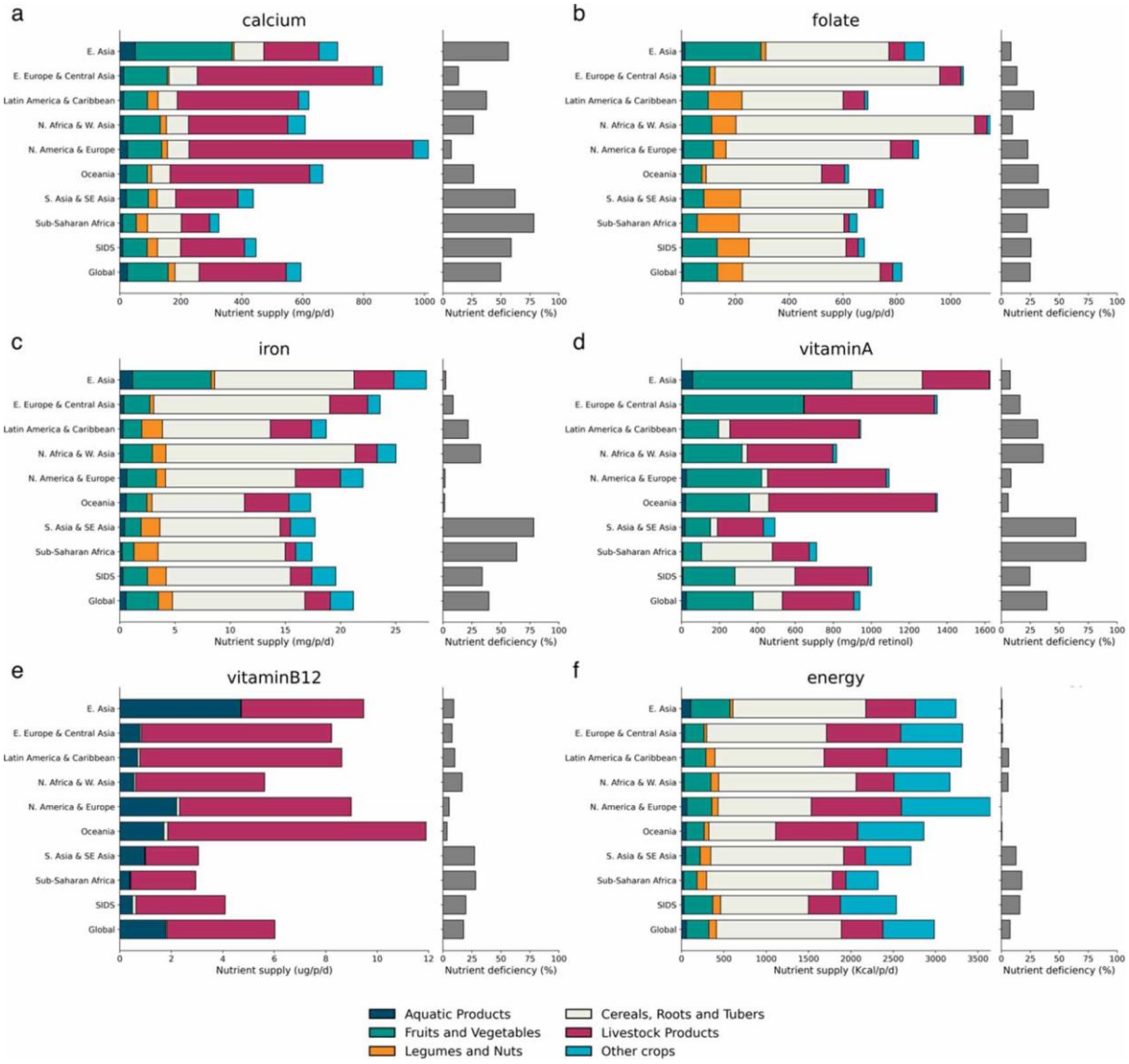

*Figure 1 Contributions of food groups to average nutrient supply and population-average nutrient deficiency in different regions of the world (*Tigchellaar *et al 2024)*

The consultant can further project food group weighted probability of climate extremes facing domestic production of five micronutrients and energy supply; and climate risk to domestic supply of micronutrients, in selected locations in Indonesia.

[1] Check categorization of food groups in Tigchelaar study or RAN PG 2025-2029

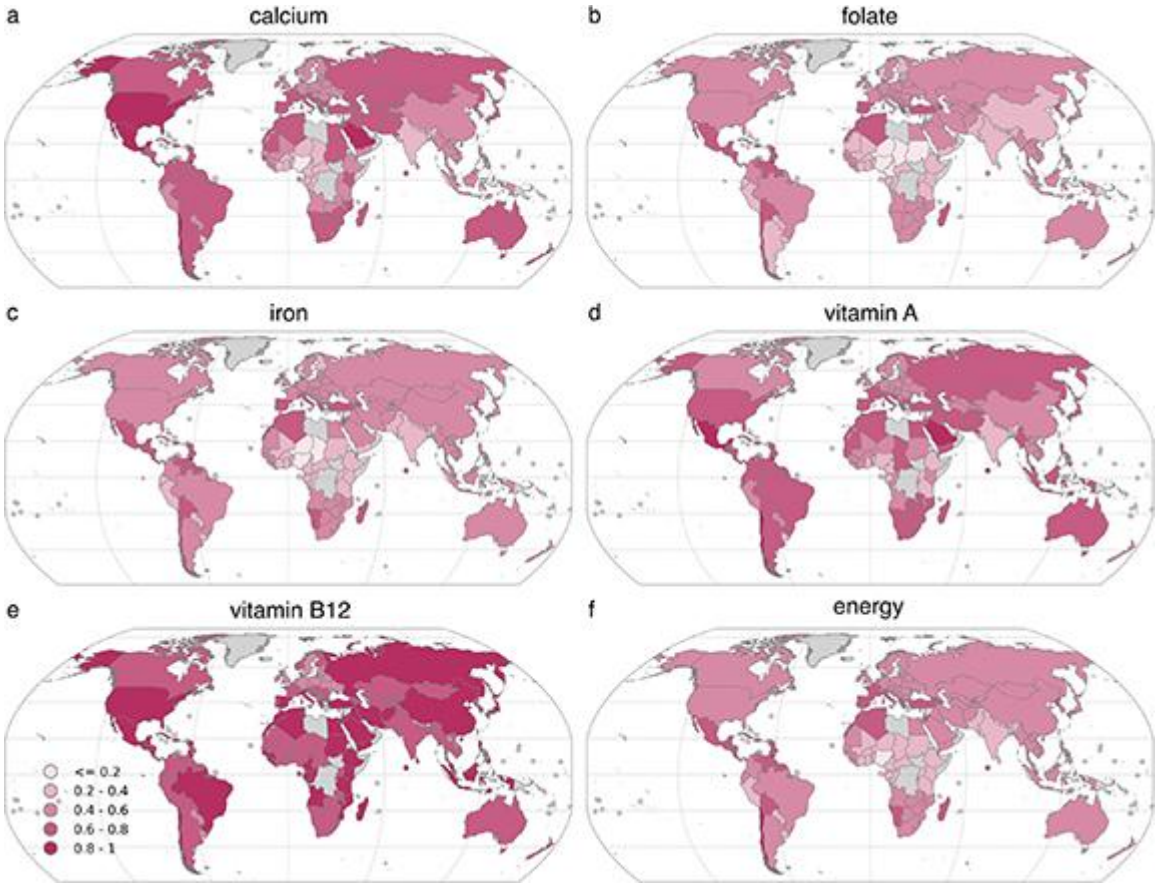

Figure 4 Food group weighted probability of climate extremes facing domestic production of five micronutrients and energy supply (Tigchellaar et al 2024)

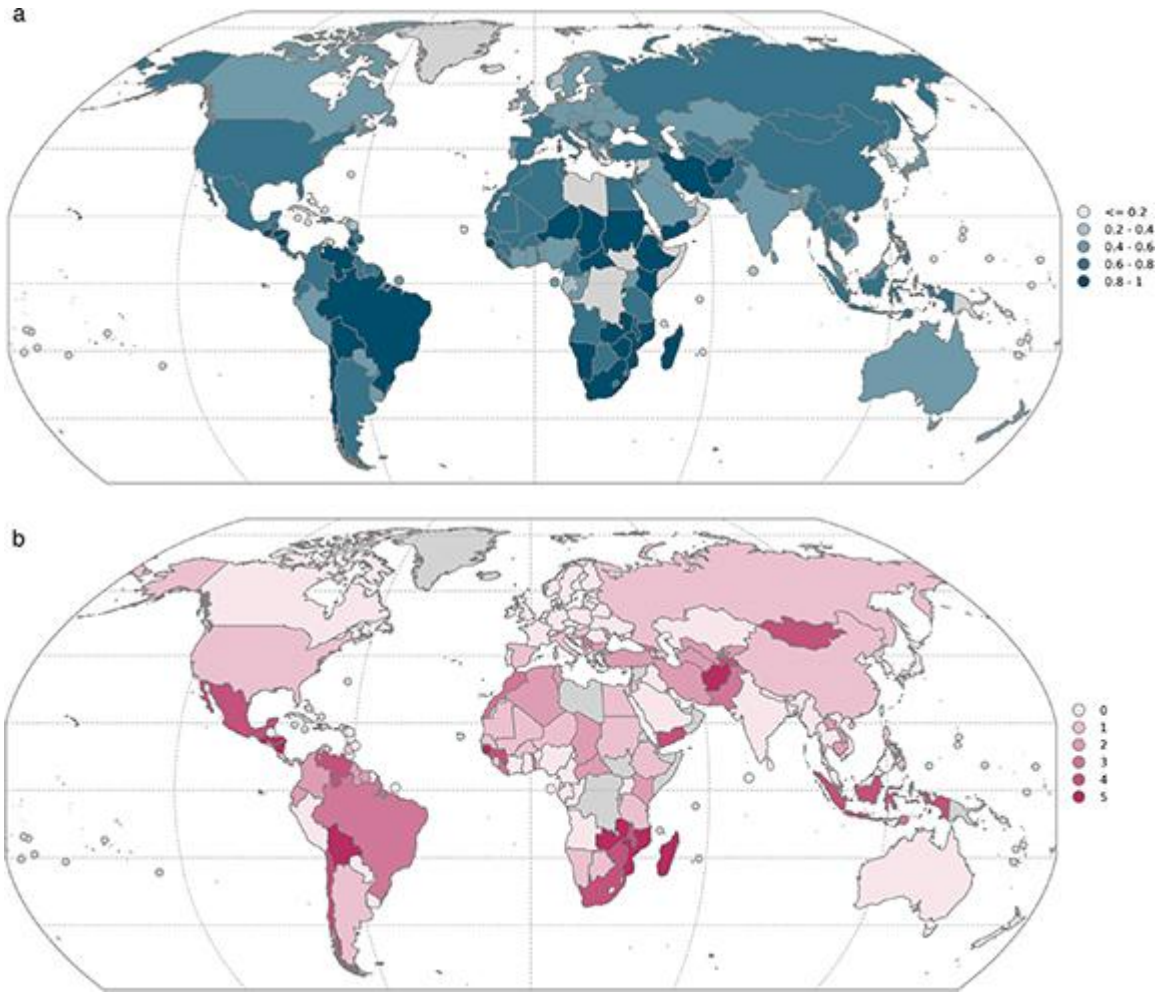

Figure 5 Climate risk to domestic supply of micronutrients (Tigchellaar et al 2024)

Table 1 Overview of Results

Climate Variability	Potential Hazard to Food Nutrition		
	Food Group	Macronutrient	Micronutrient

Distribution of Priority Location Count

Food Group	Super Priority (High Hazard)	Top Priority (Medium Hazard)	Priority (Low Hazard)

After calculating the impacts to micronutrient supply, the model must be expanded to measure the impacts to individual nutritional status (e.g., micronutrient deficiencies in women and children), considering other determinants and the economic impact due to related diseases (e.g., diabetes, anaemia, and cardiovascular disease). This model may use a system dynamics approach, following PBI approach.

The model can utilise available database such as; PGSPL studies, AKG (Recommended Dietary Intake), food system dashboard, food system vulnerability atlas, UNICEF reports, etc.

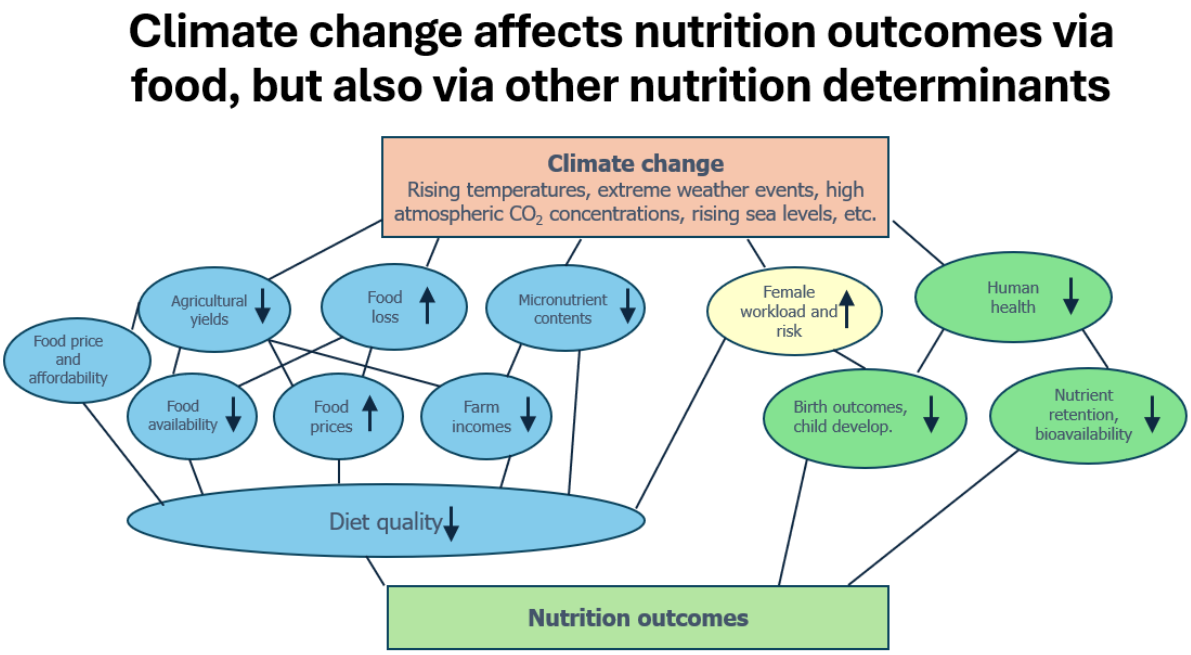

Figure 6 Other nutritional determinants to be integrated in the model; in affecting nutrition outcomes on individual

Scope of location depends on the selected food groups, determined through discussion with Bappenas, considering:

- Provinces with high and/or very high climate and malnutrition risk.
- Socio-economic vulnerability of community groups.
- Social protection status of community groups.

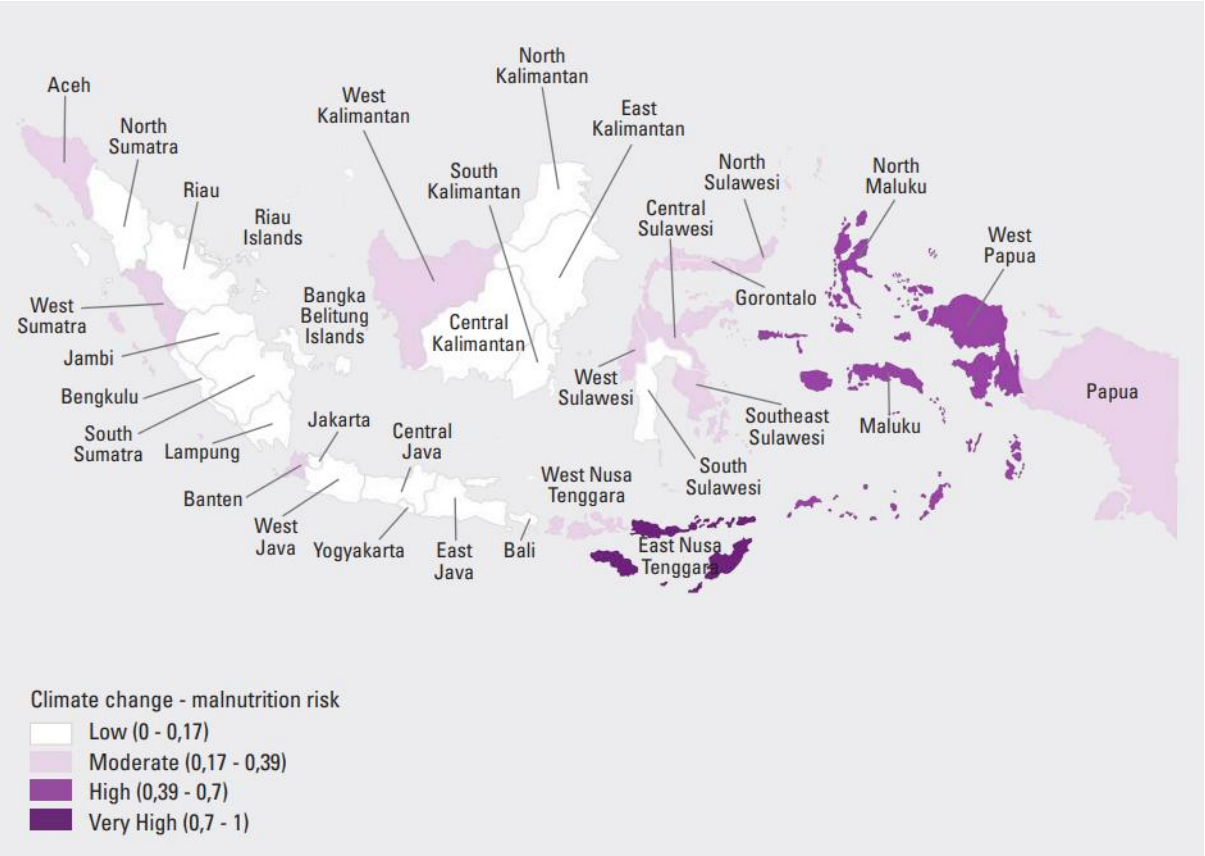

Figure 7 Map of climate and malnutrition risk

Next, the analysis will proceed with recommendations for PBI policy, along with a review of the funding allocation for these policies.

3.1. SCOPE OF WORK FOR CONSULTANT

- Develop a detailed research proposal.
- Conduct a systematic review (academic literature, grey literature, and other credible data).
- Conduct the modelling study.
- Collect and synthesize relevant data for the selected foods/commodities.
- Analyze data on the climate change impacts on the nutritional content of selected food groups.
- Prepare the analytical report.
- Publish the report and decision support tool for PBI and RPJMN policy

3.2. DELIVERABLES AND TIMELINES

Major output of the study will be;

- A joint report and publication between Bappenas and GAIN on nutrition sensitive climate risk.

- A dynamic model or decision support tool, for economic quantification related to program planning and investment in biofortification or other policy measures

Deliverables	Timeline/Deadline
Detailed research proposal outlining the detailed work plan, timeline, and data collection and analysis strategy	February 2026
Data collection and analysis	February– April 2026
Draft findings (presentation in English and Bahasa)	10 April 2026
A report (word and presentation) on the climate change impacts to staple foods and horticulture crops (in English and Bahasa)	25 April 2026
Complete dataset, raw data, analysis files, photos and videos	10 May 2026
Publication of the report Decision support tools Specific recommendation for other thematic studies on climate and nutrition	10 June 2026

3.3. CONSULTANT QUALIFICATION

- A climate expert, 5-10 years' experience in conducting climate analysis, especially for food or agriculture commodities
- A nutrition expert, 5-10 years' experience in conducting nutritional analysis on food and crops
- PhD/master's degree in nutrition, public health, food, agriculture, climate, and/or related subjects
- Extensive knowledge in (staple) foods, agriculture/horticulture, environment, and climate in Indonesia
- Proven track record and work experience in conducting scientific studies and data management
- Capability in risk management in data collection and analysis
- Strong communication skills to coordinate with GAIN, Bappenas and other partners
- Proven track record in project management
- Extensive networking with relevant partners on the topics and as data required in the workplan above
- Understanding the scope of work: the proposal shall demonstrate a clear understanding of the project objectives and deliverables.
- Demonstrated a clear understanding of the technical requirements of this ToR: providing detailed technical documentation of the proposed strategy.
- Robust methodological approaches required for conducting the study
- Comprehensive work plan and reasonableness of proposed time frame: proposal shall include a feasible work plan to ensure successful completion of deliverables, including how activities will be coordinated.

- Detailed budget and cost-effectiveness of proposal approach include evidence of cost-effective approaches to undertaking the scope of work within the proposed budget, and proposals shall identify possible challenges and include creative approaches to addressing them.
- Management and personnel plan: the team members of this project shall have the relevant qualifications and overall experience required to successfully implement the project. Additionally, the roles and responsibilities of each team member shall be clearly defined.

II. INSTRUCTIONS FOR RESPONDING

This section addresses the process for responding to this solicitation. Applicants are encouraged to review this prior to completing their responses.

1. CONTACT

Please direct all inquiries and other communications to the contact below. Reponses will not be confidential except in cases where proprietary information is involved.

- ibudiman@gainhealth.org and Eyunindio-sari@gainhealth.org.

2. BUDGET

Applicants are required to provide GAIN with a detailed fee percentage proposal. The final budget amount will have to be approved by the organisation prior to starting the project.

3. FORMAT FOR PROPOSAL

The proposal needs to be formatted as follows:

- In their proposal the consultant should propose the design of the study
- The proposal needs to be formatted as two separate documents:
    1) Technical proposal; research proposal
    - Detailed proposal on how the areas of work mentioned in Scope of Work will be addressed, including risk and mitigation strategy and timeline
    - Description of previous relevant work
    - Composition of team with names and brief biographies of all key staff (CVs may be included in an annex)
    - Three References and contact information

    2) Financial proposal:
    - Budget
    - Detailed budget justification
    - Offer of services

Review process

- Submission of written proposals
- Evaluation of written proposals

- Shortlisting for interviews
- Interviews
- Reference check
- Contract negotiations

4. SUBMISSION

Originals should be submitted as follows:

Email copy:

- ibudiman@gainhealth.org and Eyunindio-sari@gainhealth.org.

Email Subject:

- Study on Nutrition-Sensitive Climate Risk Across Food Groups in Indonesia

5. DEADLINE

Completed proposals should be submitted to GAIN **by COB Jakarta time on 5th February 2026 no later than 23.59 Western Indonesia Time (WIB) or 17.59 CET.** Proposals may be postmarked on the due date, provided that an email of the proposal is submitted by the deadline.

6. UNACCEPTABLE

The following proposals will automatically not be considered or accepted:

- Proposals that are received after the RFP deadline at the specified receiving office.
- Proposals received by fax.
- Incomplete proposals.
- Proposals that are not signed.

7. REVISIONS

Proposals may be revised by electronic mail and confirmed by hard copy provided such revision(s) are received before the deadline.

8. ACCEPTANCE

GAIN will not necessarily accept the lowest cost or any of the Proposals submitted. Accordingly, eligibility requirements, evaluation criteria and mandatory requirements shall govern.

9. COMPLETION

- Proposals must be submitted on official letterhead of the lead organisation or firm and must be signed by a principal or authorising signatory of the lead firm or organisation.
- In case of errors in calculating overall costs, the unit costs will govern.
- It is the applicant's responsibility to understand the requirements and instructions specified by GAIN. In the event that clarification is necessary, applicants are advised to contact the responsible person at GAIN under section II. point 1., prior to making their submission.

- While GAIN has used considerable efforts to ensure an accurate representation in this Request for Proposal (RFP), the information contained in this RFP is supplied solely as a guideline. The information is not warranted to be accurate by GAIN. Nothing in this RFP is intended to relieve applicants from forming their own opinions and conclusions with respect to the matters addressed in this RFP.
- By responding to this RFP, the applicant confirms its understanding that failing to comply with any of the RFP conditions may result in the disqualification of their submission.

10. RIGHTS OF REJECTION

GAIN reserves the right to reject any or all submissions or to cancel or withdraw this RFP for any reason and at its sole discretion without incurring any cost or liability for costs or damages incurred by any applicant, including, without limitation, any expenses incurred in the preparation of the submission. The applicant acknowledges and agrees that GAIN will not indemnify the applicant for any costs, expenses, payments or damages directly or indirectly linked to the preparation of the submission.

11. REFERENCES

GAIN reserves the right, before awarding the Proposal, to require the applicant to submit such evidence of qualifications as it may deem necessary, and will consider evidence concerning the financial, technical and other qualifications and abilities of the applicant.

12. RELEASE OF INFORMATION

After awarding the Proposal and upon written request to GAIN, only the following information will be released:

- Name of the successful applicant.
- The applicant's own individual ranking.

III. TERMS AND CONDITIONS OF THIS SOLICITATION

1. NOTICE OF NON-BINDING SOLICITATION

GAIN reserves the right to reject any and all bids received in response to this solicitation and is in no way bound to accept any proposal. GAIN additionally reserves the right to negotiate the substance of the successful applicants' proposals, as well as the option of accepting partial components of a proposal if deemed appropriate.

2. CONFIDENTIALITY

All information provided as part of this solicitation is considered confidential. In the event that any information is inappropriately released, GAIN will seek appropriate remedies as allowed. Proposals, discussions, and all information received in response to this solicitation will be held as strictly confidential.

3. RIGHT TO FINAL NEGOTIATIONS ON THE PROPOSAL

GAIN reserves the right to negotiate on the final costs, and the final scope of work of the proposal. GAIN reserves the right to limit or include third parties at GAIN's sole and full discretion in such negotiations.

4. EVALUATION CRITERIA

Proposals will be reviewed by the Selection Team. The following indicate a list of the significant criteria against which proposals will be assessed. This list is not exhaustive or 100% inclusive and is provided to enhance the applicants' ability to respond with substance.

Applicants are required to submit the following information, conforming to the guidelines given in this section:

- Understanding of the scope of work:
    - Proposal shall demonstrate a clear understanding of the project objective and deliverables as outlined in Section I.
- Demonstrate a clear understanding of the technical requirements of this RFP:
    - Providing detailed technical documentation of the proposed strategy.
    - Evidence of experience delivering solutions using the proposed information technology platform.
- The creative and methodological approaches required to implement each of the parts of the scope of work.
- Comprehensiveness of work plan and reasonableness of proposed time frame:
    - Proposal shall include a feasible work plan to ensure successful completion of deliverables.
    - The work plan details how activities will be coordinated.
- Detailed budget and cost-effectiveness of proposed approach:
    - Evidence of cost-effective approaches to undertaking the scope of work within the proposed budget.
    - Proposal shall identify possible challenges and include creative approaches to addressing them.
- Management and personnel plan:
    - The team members working on this project shall have the relevant qualifications and overall experience required to successfully implement the project.
    - Roles and responsibilities of each team member shall be clearly defined. GAIN shall have one main contact person clearly identified in the proposal.
- A duly completed offer of services.

GAIN reserves the right to contact the individuals and contractor(s) in order to verify the information provided as part of the Proposal.

5. REVIEW PROCESS

The review process will involve a Review Panel with participants selected by GAIN.

6. LIMITATIONS WITH REGARD TO THIRD PARTIES

GAIN does not represent, warrant, or act as agent for any third party as a result of this solicitation. This solicitation does not authorise any third party to bind or commit GAIN in any way without GAIN's express written consent.

7. COMMUNICATION

All communication regarding this solicitation shall be directed to appropriate parties at GAIN. Contacting third parties involved in the RFP, the review panel, or any other party may be considered a conflict of interest and could result in disqualification of the proposal.

8. FINAL ACCEPTANCE

Award of a Proposal does not imply acceptance of its terms and conditions. GAIN reserves the right to negotiate on the final terms and conditions including the costs and the scope of work when negotiating the final contract to be agreed between GAIN and the applicant.

9. VALIDITY PERIOD

The offer of services will remain valid for a period of 60 days after the Proposal closing date. In the event of award, the successful applicant will be expected to enter into a contract subject to GAIN's terms and conditions.

10. INTELLECTUAL PROPERTY

Subject to the terms of the contract to be concluded between GAIN and the applicant, the ownership of the intellectual property related to the scope of work of the contract, including technical information, know-how, processes, copyrights, models, drawings, source code and specifications developed by the applicant in performance of the contract shall vest entirely with GAIN.

11. SCOPE OF CHANGE

Once the contract is signed, no increase in the liability of GAIN or in the fees to be paid by GAIN for the services resulting from any change, modification or interpretation of the documents will be authorised or paid to the applicant unless such change, modification or interpretation has received the express prior written approval of GAIN.

IV. OFFER OF SERVICES

4. Offer submitted by:

   _____

   _____

   _____

   (Print or type business, corporate name and address)

5. I (We) the undersigned hereby offer to GAIN, to furnish all necessary expertise, supervision, materials, and other things necessary to complete to the entire satisfaction of the Executive Director or authorised representative, the work as described in the Request for Proposal according to the terms and conditions of GAIN for the following prices:
   a. Click or tap here to enter text.
   b. Click or tap here to enter text.
   c. Click or tap here to enter text.
   d. Click or tap here to enter text.
6. I (We) agree that the Offer of Services will remain valid for a period of sixty days (60) calendar days after the date of its receipt by GAIN.
7. I (We) herewith submit the following:

(a) A Proposal to undertake the work, in accordance with GAIN's requirements specified.
(b) A duly completed offer of services, subject to the terms herein.

OFFERS WHICH DO NOT CONTAIN THE ABOVE-MENTIONED DOCUMENTATION OR DEVIATE FROM THE PRESCRIBED COSTING FORMAT MAY BE CONSIDERED INCOMPLETE AND NON-RESPONSIVE.

Date this day of Click or tap here to enter text. in Click or tap here to enter text.

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Signature (applicant)

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Signature (applicant)

APPENDIX

Table 1. Recommended Study Indicators, to be aligned with PBI

Climate Variability	**Exposure**	**Sensitivity (Nutritional Vulnerability)**	**Adaptive Capacity (Economic Vulnerability)**	**Impact (Hazard): Nutritional Deficiency**
Rainfall	Production	Prevalence of inadequate nutrient intake	Percentage of population with income below the national poverty line	Arithmetic average of the exposure score to hazard and the vulnerability score (average of **NutVn and EconVn**)
Temperature	Total nutrient use/direct food consumption	Dietary energy	Gross Domestic Product per capita based on Purchasing Power Parity	
Combination of temperature and rainfall		Dietary diversity	Healthy consumption pattern cost	Local government support