

**Research can offer a strategic blueprint for bolstering food security throughout Asia, but regional cooperation is required.**

Asia needs a unified mechanism to orchestrate and fund research to help combat hunger and malnutrition throughout the region, according to the Association of Academies and Societies of Sciences in Asia (AASSA).

Asia is home to 4.5 billion people – 60% of the world's population – with millions

and education programmes,” the authors write in the report *Opportunities and Challenges for Research on Food and Nutrition Security and Agriculture in Asia*.

The report was published as part of the Food and Nutrition Security and Agriculture project funded by the German government. AASSA is a non-profit organisation that aims to facilitate regional development through the advancement of science and technology in Asia and Australasia.

# SECURING ASIA'S FOOD AND NUTRITION

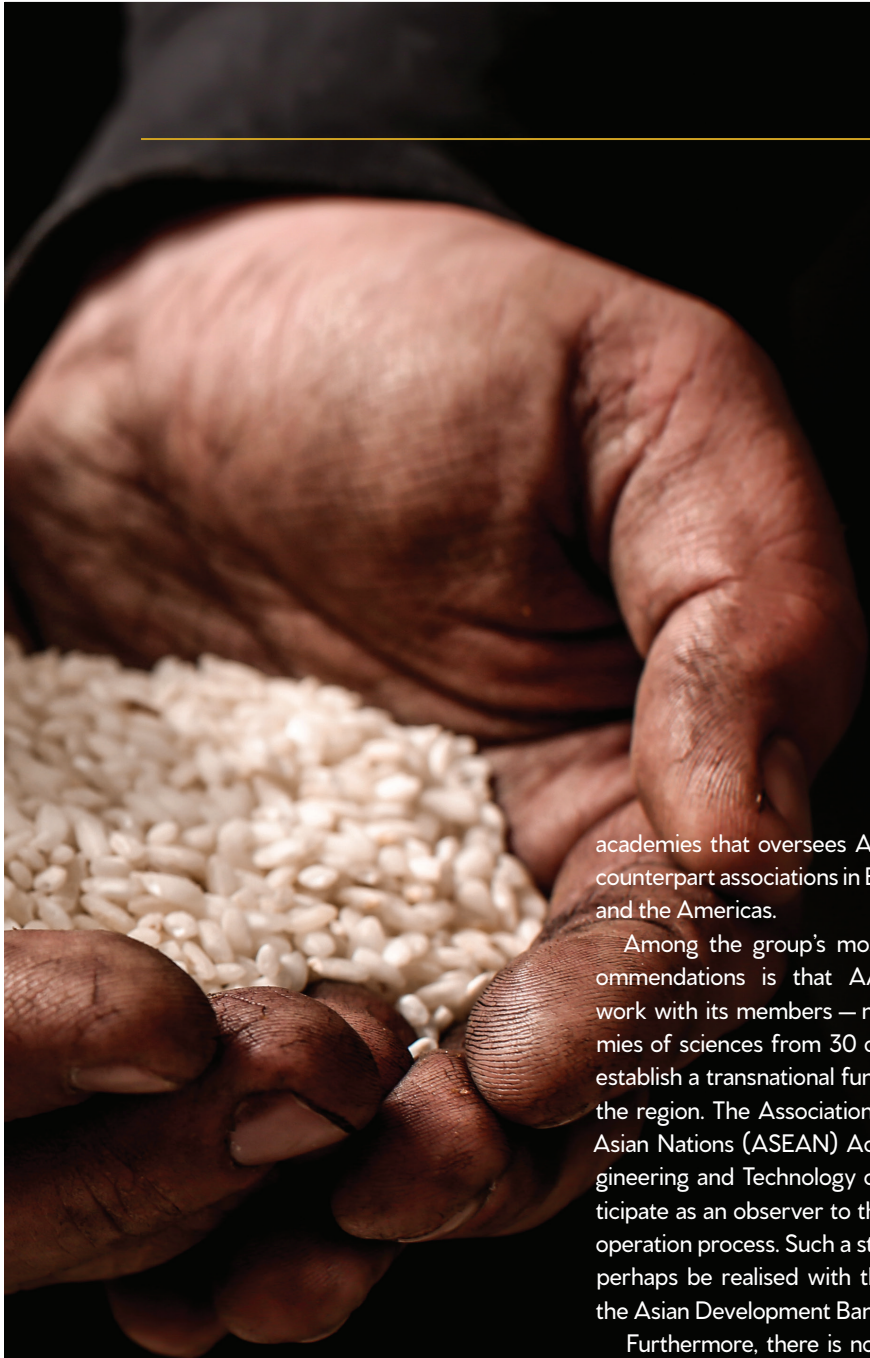
hungry or undernourished. While hunger is an issue for every nation, ten countries are at a particularly high risk of not being able to secure access to safe and healthy food for all citizens; what the United Nations defines as food security.

Science and technology should be central to addressing food security challenges, argue AASSA members, who published an extensive report on the issue. However, the region lacks a framework that facilitates international research collaborations similar to the European Science Foundation or Biosciences in Africa.

“There is an urgent need to form and fund interdisciplinary cooperative research

The report analysed the status of food security in the region, and provides recommendations in line with the UN's Sustainable Development Goal to end hunger and malnutrition by 2030.

“Food and nutrition security is key to progress in very diverse regions of Asia and Australasia, which have great variations in GDP, population densities, science and technology advancement, education levels, agricultural practices, food habits and climate change impacts. The report attempts to take into account all these challenges,” says Krishan Lal, co-chair of IAP for Science at the InterAcademy Partnership, a global network of science



academies that oversees AASSA and its counterpart associations in Europe, Africa and the Americas.

Among the group's most urgent recommendations is that AASSA should work with its members — national academies of sciences from 30 countries — to establish a transnational funding body for the region. The Association of Southeast Asian Nations (ASEAN) Academy of Engineering and Technology could also participate as an observer to the regional cooperation process. Such a structure could perhaps be realised with the support of the Asian Development Bank.

Furthermore, there is no transnational body dedicated to overseeing agricultural policy in the region. This has resulted in varied regulations in the agricultural sector across the continent; for example non-unified terminologies, definitions and regulations for genetically modified organisms (GMOs). Also, the level of involvement of scientists in decision-making processes varies by country. This makes it difficult to coordinate interactions among governments, non-profit organizations and scientists at a regional level.

"The region already has numerous universities and training facilities that have strong backgrounds and reputations in agricultural science, food science and nutrition," the authors write. "This considerable intellectual asset base should be fully leveraged."

### HOT SPOTS FOR FOOD INSECURITY

Based on current undernutrition rates and projected population growth, the report identifies ten countries that are at high risk of food insecurity: India, Bangladesh, Pakistan, Afghanistan, Nepal, Myanmar, the Philippines, Iraq, Tajikistan and Yemen.

India had a particularly high hunger index: a hunger indicator taking levels of undernourishment, child wasting, child stunting and child mortality into consideration. India accounts for three-quarters of the population in South Asia, making it the hungriest part of the world, followed by sub-Saharan Africa, according to the Global Hunger Index 2017.

The authors stress that future strategies should focus not only on increasing crop yields but also on eradicating hidden hunger caused by micronutrient deficiencies such as a lack of energy, proteins or essential vitamins and minerals. Producing more food varieties will also prevent over-nutrition, caused by an unbalanced diet, and its related health problems.

Further research should identify what drives hunger in these countries. The result should help determine areas of research, development and education that need to be prioritised for investment.

Continued next page



Continued from page 63

### DIFFERENT COUNTRIES, SIMILAR PROBLEMS

The authors recommend a systems analysis to understand the obstacles in food security in Asia. Unlike analyses based on national data, this approach allows researchers to group parts of different countries that share similar geographical and social factors and seek common solutions for that group. This helps them pinpoint unique challenges to a specific group that can be overlooked in aggregate data.

For example, Golam Rasul and colleagues from the International Centre for Integrated Mountain Development, Nepal, used this approach to determine that a shift from traditional diets, such as millets and buckwheat, to modernised food, based on white rice and flour, led to a decline in agro-biodiversity and food price hikes in the Hindu Kush Himalayan region. This mountainous area stretches over 3,500 kilometres across Afghanistan, Bangladesh, Bhutan, China, India, Nepal, Myanmar and Pakistan.

### FEED THE WORLD SUSTAINABLY

Asia hosts some of the largest food producers in the world. China, for example, feeds one-fifth of the global population using only 7% of the world's arable land. Yet, rapid urban development and growing population place pressure on the country's natural resources, and degrade more than half of its agricultural area. Although development has contributed to China's economic growth, it has also increased demand for essential commodities such as food and water. In order to maintain a nation's progress, sustainable agricultural production should be part of any food strategies, the authors point out.

Climate change adds to development's negative impacts on water and land availability. The authors urge that developing mitigation plans should be a regional priority. Specific recommendations for the region should incorporate existing international agreements, such as the Paris Agreement, the Sendai Framework for Disaster Risk Reduction, and the Sustainable Development Goals.

The authors conclude that much can be achieved if the countries work on food security "transcending the usual geographical and national boundaries".

