

ROUNDTABLE FORUM GLOBAL ACTION PLAN FOR AGRICULTURAL DIVERSIFICATION (GAPAD)

The Contribution of Agricultural Diversification to SDG2
of the United Nations Sustainable Development Agenda 2030

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RAPPOREUR REPORT

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EXECUTIVE SUMMARY

Background

The Global Action Plan for Agricultural Diversification ([GAPAD](#)) is an initiative to support the Sustainable Development Agenda 2030 ([SDA 2030](#)) adopted by the United Nations in September 2015. It responds to the [Declaration on Agriculture Diversification](#), signed by world leaders during the United Nations Framework Convention on Climate Change (UNFCCC COP 21) in Paris in December 2015. The Declaration calls for a global action plan for agricultural diversification.

Agricultural diversification entails expanding the current food crops through increasing species diversity and more resilient agricultural ecosystems that include new crops for food and non-food uses.

Over 7 billion people currently depend on just four major crops to supply 60% of their food. By 2050 the global population is set to reach 9 billion. The world is already experiencing the implications of temperature increase and its impact on food supply. It is becoming increasingly accepted that in a hotter world options for agricultural diversification are needed that include a wider range of crops and cropping systems.

The GAPAD initiative is directly addressing six of the 17 Sustainable Development Goals (SDGs): 2 'zero hunger'; 7 'affordable and clean energy'; 12 'responsible consumption and production'; 13 'climate action'; 15 'life on land' and 17 'partnerships for the goals'. Agricultural diversification will also eventually contribute to achieving SDG1 'no poverty'.

The Nairobi roundtable forum

More than 30 people from five continents, all of whom were distinguished experts and leaders in fields relevant to agricultural diversification, attended a roundtable forum (RTF) held in Nairobi on 25 and 25 October 2016. They included high-level representatives of the African Union Commission (AUC), the SDG Centre for Africa and the Australian High Commission together with representatives from research and development organisations and seven journalists. The aim of the RTF was to stimulate networking and start to develop a global action plan for agricultural diversification which will contribute to achieving SDG 2, 'zero hunger'. It is envisaged that agricultural diversification can improve nutrition, enhance food security, promote sustainable agriculture and help alleviate poverty amongst other benefits.



After a formal opening by H.E. Rhoda Peace Tumusiime, Commissioner for Rural Economy and Agriculture at the AUC, and brief scene-setting presentations and discussions, participants, including the Commissioner, quickly got down to work.

The first step was to unpack the five main targets (2.1-2.5) and three additional targets (2a-c) that are to be achieved in [SDG2](#), the long title for which is ‘end hunger, achieve food security and improve nutrition, and promote sustainable agriculture’ – or ‘zero hunger’ for short. Participants developed working definitions of key words and phrases in the targets to enhance their understanding. They also identified and discussed some of the challenges that lay ahead in trying to meet them. This exercise lay the foundation for the main focus of the RTF - to start to develop an action plan to meet the targets.

To do this, first participants developed GAPAD targets based on each of the eight SDG2 targets but focused on the role of agricultural diversification. They then identified the priority activities/actions needed to achieve these targets. Some progress was also made in determining when each activity could be completed and who might take the lead. For each of the eight targets a small number of priority activities were identified.

During the closing session of the RTF, participants were praised for the quality of the discussions over the two days and for the ambitious nature of the plan that was beginning to emerge. Given the complexity, enormity and importance of achieving SDG2, this approach was considered to be exactly what was needed. The roundtable participants agreed that the time was right to make an urgent start on the complex and ambitious process of agricultural diversification to meet the needs of a hotter world. It was noted that the participation of the AUC Commissioner throughout the two days of the roundtable was most unusual; a very clear demonstration of the seriousness with which the AUC is taking GAPAD.

Going forward

The next step will involve a small group of eminent, respected and highly qualified individuals who will distil and refine the output of the Nairobi roundtable, and integrate these with the distilled and refined outputs from the roundtables that addressed the other five SDGs being addressed by GAPAD. The result is expected to be a compelling, credible, inclusive, authoritative and investable global plan for agricultural diversification in a hotter world, which has the support of all the relevant institutions.

It is anticipated that GAPAD will be formally launched in mid-2017, venue yet to confirmed. At the same time the bold plan for agricultural diversification will be submitted to the secretariat of UN SDA 2030.

In the meantime, GAPAD will seek to build a network of experts, stakeholders, institutions, governments, regional and international organisations, and distinguished individuals to support and champion this urgent and important initiative.

1 OPENING SESSION

1.1 Welcoming remarks: Dennis Rangi, DG Development, CABI



In his welcoming remarks, after facilitating a self-introduction session, Dennis Rangi welcomed the distinguished guests and participants and presented background information about the GAPAD initiative and the challenges it aims to address. He went on to say: *“The roundtable forum is offering us a platform to agree on how agricultural diversification can and will support the achievements of the 8 targets for SDG2, via specific action plans. We [member institutions of AIRCA] aspire to increasingly play a role in bringing people from around the world together to make a difference – so this to me is the beginning of a much wider and long lasting collaboration with all of you!”*

1.2 Official opening: H.E. Rhoda Peace Tumusiime, Commissioner for Rural Economy and Agriculture at the African Union Commission (AUC)

Before officially opening the roundtable, the Commissioner passed on greetings from Her Excellency Nkosazana Dlamini-Zuma, Chairperson of the AUC. She said: *“This meeting contributes directly towards the Growth and Transformation Agenda 2063 and the realization of the Malabo Declaration. I am reliably informed that GAPAD is the first global plan for how agricultural diversification can support a universally accepted agenda for sustainable development. This initiative will also guide global decision makers in their quest to achieve the aspirations and targets established in the UNFCCC Paris Agreement. The process of developing GAPAD through a comprehensive programme of symposia over a three-year period will build new knowledge, foster leadership, strengthen existing capacities, enhance networks and partnerships and generate new collaboration and undertakings. Key indicators of the success and likely impact of GAPAD will be the number of countries that endorse the plan, along with the number that elect to develop a National Plan of Action for its implementation.”*



1.3 Keynote address: Dyno Keatinge, Ambassador Emeritus, AIRCA

Title: GAPAD-AIRCA and SDG2: From sustenance to complete nourishment in a changing climate

Key message: The nine AIRCA members are already having impact on the SDGs but all research centres working together could have more impact

- An impressive list of examples was presented whereby AIRCA members are already contributing to progress towards SDGs 1 - 5.
- All research centres working together can make big contributions to SDG to 2030 and beyond.

Copy of full presentation available at <http://www.airca.org/index.php/airca-resources/other-articles/42-gapad-sdg-2-rtf>

1.4 Roadmap for GADAP

Presenter: Ali Sayad Azam, CEO, CFF; Title: Transforming agriculture for good

Key points:

- UN Declaration on Agricultural Diversification, made at COP21, called for a global action plan for agricultural diversification. The objective of this meeting is to start to develop the plan for SDG2, 'zero hunger'.
- The declaration also calls for a 'Protocol on Agricultural Diversification' to the Convention on Biological Diversity, 1992; this is a game changer.
- GAPAD is addressing six of the 17 SDGs: 2, 7, 12, 13, 15 and 17.
- Timeline for GADAP is:
 - December 2015, Paris: UN Declaration on Agricultural Diversification
 - March 2016, Kuala Lumpur: Roundtable forum, SDG 7 'affordable and clean energy for all'
 - October 2016, Nairobi: Roundtable forum, SDG 2 'zero hunger'
 - November 2016, Marrakesh: Planning meeting, SDG 13, 'climate action'
 - 2017, to be confirmed: Planning meeting, SDG 12, 'responsible consumption and production'
 - 2017, to be confirmed: Planning meeting, SDG 15, 'life on land'
 - July 2017, to be confirmed: GAPAD launch

1.5 Webinar content and feedback

Presenter: George Oduor, CABI

Key message: The Webinar, held in September 2016, attracted 57 virtual attendees. You can watch the entire webinar at <https://www.youtube.com/watch?v=0K-QwOlvKp0> (96 minutes running time). A detailed report can be accessed at <http://www.airca.org/index.php/airca-resources/other-articles/42-gapad-sdg-2-rtf>



- Objective: To stimulate discussions on ending hunger and achieving food and nutrition security, in advance of the Nairobi roundtable.
- The format consisted of a questionnaire administered to all participants upon registration, three speakers and moderated discussions:
 - **Simon Anderson** (Director, IIED, UK) spoke about *diversification in support of sustainable agriculture in a changing climate: constraints and opportunities*
 - **Walter de Boef** (Senior Program Officer, BMGF, USA) spoke about *keeping hunger at bay: agricultural diversification as a global driver of food security and economic growth*
 - **Namukolo Covic** (Research Coordinator, IFPRI, Ethiopia) spoke about *enhancing nutrition security and livelihoods: role of agricultural diversification, an African perspective*
 - During the Webinar, 20 questions were submitted by participants to the panelists.
 - In answer to the questionnaire question: are there national policies that recognise the need for diversifying agriculture (crops/livestock/fisheries), including a climate change strategy or preventing trade restrictions and distortions, 50% of Webinar participants answered no.
 - In answer to the question: if you were developing a sustainable agricultural investment program, which are the 3 main factors you'd consider to maximize its impact on food and nutrition security, the three top answers were: crop selection (diets) and diversification; optimal growing conditions; and empowerment of woman and marginalised groups (education etc.)

2 SCENE-SETTING SESSION

Four brief presentations were made to help set the scene for the RTF with each aligned to one or more of the eight targets of SDG2. The presentations were on hunger and nutrition; agricultural productivity; agricultural genetic diversity; and investment, trade and markets. The key message and some of the main points made are summarised below. The full presentations can be accessed online at <http://www.airca.org/index.php/airca-resources/other-articles/42-gapad-sdg-2-rtf>

In addition, two brief presentations were made by participants: one focused on nutrition and the other introduced the newly established SDG Centre for Africa, Kigali.

2.1 Title: Ending hunger and malnutrition in Africa (targets 2.1 and 2.2)

Presenter: James Nyoro, Senior Advisor, IDEAfrica

Key message: Importance of political goodwill and commitment

- Conventional development approach achieves islands of success, which can't be scaled up.
- There have been positive achievements in Africa: poverty rate down, proportion of underweight children down, second fastest growing regional economy, but hunger and malnutrition still present. Growth in most cases is not inclusive – agriculture and manufacturing sectors not growing.
- In most African countries, political will to support agricultural development is lacking, although Ethiopia, Niger and Rwanda have shown leadership.
- Population growing rapidly, e.g. 1 million more Kenyans each year – 'if you think situation is bad now, just wait!'
- 3 key lessons from book 'How Asia works - secure investment; implement rural financial systems for farmers and agro-processors; promote social protection.



2.2 Title: Intensifying sustainable agricultural productivity to meet SDG2 (targets 2.3 and 2.4)

Presenter: Timothy Sulser, Scientist, IFPRI

Key message: Need solid data and science to back up policy recommendations

- Gender matters: 50% of agricultural labour force but disadvantaged in access to productive assets, education, extension and information services, and natural resource knowledge.

- IFPRI has just compiled and shared 20 years of gender research, but there is still need for more rigorous research on agriculture and women's empowerment: <http://bit.ly/2dEX3mu>
- Women's economic empowerment leads to improved child nutrition and better household food security.
- IFPRI has strong focus on modelling with simulations, including for climate smart agriculture, to 2050.
- Many opportunities to address SDGs, but it requires a more comprehensive approach that recognizes that these types of outcomes are intertwined and part of a complex system (agricultural diversity is one solid block of this mosaic).
- A key element from IFPRI's perspective is the need for solid data and science to back up policy recommendations:
 - For modelling need to extend our capabilities to work with disaggregated fruits and vegetables: VERY high demand for analysis of nutrition and health outcomes
 - Cash crops are also critical production alternatives to consider with respect to their key role in household income and livelihoods
 - Gender dimension is crucial to have included in the research/extension activities from the very beginning.

2.3 Title: Genetic diversity for sustaining agricultural diversity (target 2.5)

Presenter: Thomas Dubois, Regional Director, ECA, World Vegetable Centre

Key message: Investing in genetic diversity now will pay dividends in future, but no-one wants to pay for seed banks

- Seed banks not usually in spotlight: donors don't want to fund ongoing costs.
- National seed banks struggling even more than global ones: 6.5 million accessions at risk and huge backlog of regenerating seeds – 'seeds withering away'.
- Since 1900, 70% of agri-biodiversity has been lost, forever.
- Non-staple crops poorly served by gene banks.
- Good alternatives to risky crops, such as tomatoes, which have been described as no more than 'standing water': e.g. African nightshade - fast-growing, low susceptibility to pests and diseases, long harvest period, can preserve with simple technologies.
- Malnutrition – not just undernutrition: obesity and overweight is big problem, even in countries also coping with undernutrition.
- Over last 100,000 years we have gone from relying on 7000 crops to dependency on maize, wheat and rice for 60% of our calories.
- African indigenous vegetables are high in micronutrients and other components with additional health benefits, e.g. antioxidants which can be protective against cancer.
- But still hard to get good dietary outcomes: depends on affordability, way harvested and cooked.
- Bambara groundnut, known as 'complete food' and 'hardy peanut' in local languages: very tolerant to drought, depleted soils – but only grown in few countries West Africa. Huge potential to grow in South America, rest Africa, Asia and Australia.

2.4 Title: Increasing investments, facilitating trade and strengthening commodity market systems (target 2a, 2b and 2c)

Presenter: Roger Day, SPS Coordinator, CABI

Key message: Possible opportunities and benefits from agricultural diversification for investment, trade and commodity markets, but also risks and challenges

- Investment: SDGs will need USD 265 billion a year to achieve.
- Smallholders are biggest investors in agriculture in Sub-Saharan Africa.
- Diversification could decrease risk, increasing investment, but diversification as a new enterprise could also increase risk.
- Can new areas of technology currently attracting funding, e.g. molecular techniques, GM, support agricultural diversification?
- Extension is weak – but agricultural diversification would likely put more demands on extension.

- Intra-regional trade in Africa is very low: transaction costs, e.g. transport costs for shipping containers, are too high.
- Africa is importing more than it is exporting in agriculture sector and gap widening.
- Food prices very volatile and affects poor most: speculation is an important cause, amongst others. Agricultural diversification might reduce impacts of price volatility, if diets diversified.

2.5 Presenter Ruth Oniang'o, CABI Board and Rural Outreach Program Africa

Key message: Nutrition, an idea whose time has come

- Kenya is facing hunger now but we don't predict coming hunger – we start begging!
- Ethiopia has 70,000 extension workers but Kenya has no public extension.
- Research communication and technology use not well funded, so why do research?
- Farmers need simple messages.
- Capacity in nutrition is low: in past was not considered a serious topic, but now is an important science.



2.6 Presenter: George Sempheo, Chief Advisor, SDG Centre, Kigali

Key message: Shows how serious SDA 2030 is being taken in Africa

- New – established July 2016.
- 6 African presidents on the board plus key private sector and civil society members.
- It looks at what is possible for Africa for 17 SDGs – e.g. in education, research, policy analysis.
- Will learn lessons to help push agenda forward.
- Will be an important partner for GAPAD.

3 GROUP WORK OUTPUTS: DEFINITION AND CHALLENGES OF ACHIEVING TARGETS OF SDG 2

3.1 Approach

Participants divided into four working groups, each of which was tasked with addressing one or more of the eight targets that make up SDG 2. Groups were left to decide how best to tackle the task, the objective of which was to unpack the SDG2 targets, developing working definitions for key words and phrases so as to enhance their understanding and identifying challenges associated with achieving them. Although all the outputs generated by the groups delivered on the task at hand, the way they approached the task and reported their deliberations varied. Below are presented the outputs from each group with only minimal editing.

3.2 Group work outputs

3.2.1 Group 1: Targets 2.1 and 2.2

Group members

- Ali Azam Sayeed, CFF
- Celine Termote, Bioversity International
- Dyno Keatinge, AIRCA
- Esther Omosa, ILRI
- Morris Akiri, CABI
- Peace Rhoda Tumusiime, AUC
- Ruth Oniang'o, Rural Outreach Program Africa
- Timothy Sulser, IFPRI
- Victoria Ndanyi, Rural Outreach Program Africa



SDG 2 targets covered

SDG 2.1 by 2030 end hunger and ensure access by all people, in particular the poor and people in vulnerable situations including infants, to safe, nutritious and sufficient food all year round.

SDG 2.2 by 2030 end all forms of malnutrition, including achieving by 2025 the internationally agreed targets on stunting and wasting in children under five years of age, and address the nutritional needs of adolescent girls, pregnant and lactating women, and older persons.

Key definitions of terms

Access to food/nutrition made up of various types:

Physical accessibility

Cultural accessibility, i.e. belief systems, e.g. Cameroon where certain foods have beliefs tied to them as aphrodisiacs, etc.

Economic accessibility, affordability of food

Micronutrient accessibility

Bio-availability/accessibility

Sufficient - is food sufficient (quality and quantity):

Defined as types of food taken and method of preparation (knowledge on how to make food work in nutrition).

Food available all year round. Processing, packaging and marketing to play a key role in in this.

Opportunity to link in, incorporate private sector

Challenges for achieving targets

- Packaging of knowledge/information on nutrition. Developing simple and easy to understand messages for specific target groups, e.g. [Shujaaz](#) for CABI.
- Literacy levels/economic status affect nutrition. Education on key micronutrient requirement awareness.
- Attitude and convenience. Healthy food and fruits take time to prepare. Healthy food is also expensive.

- Loss of traditional indigenous knowledge on traditional food from one generation to the next. Perceptions that the indigenous foods are for poor people.
- Lack of awareness/knowledge on nutrition aspects by governments, media, etc. Women with education are more enlightened on best feeding practices for their babies/children.
- Separation of agriculture and nutrition departments in government structures impedes instead of complementing efforts between the two strongly related subjects.

Recommendations

- Need new/well defined indicators for targets that are currently not clearly spelt out: safe/nutritious/sufficient. Develop easier way to measure indicators of objectives.
- Think more seriously about young women/girls and ensure that they are properly nourished. Feeding teenage girls to ensure the next generation isn't malnourished.
- Explore ways to bring nutrition in through innovative ways, bio-fortifying food with potatoes with [Moringa](#).
- Brand GAPAD as the source of evidenced nutrition knowledge/expertise.
- Provide an evidence base as GAPAD with raw/quantitative data on nutrition. Most of the information is from reviewed papers.
- Develop advocacy mechanisms to champion nutrition at policy level.
- Identify champions from pool of influential persons e.g. [John Koufor](#), ex-president Ghana.

3.2.2 Group 2: Targets 2.3 and 2.4

- Group members
- George Adhaja, National Council of NGOs, Kenya
- George Oduor, CABI
- Jayaraman Durai, INBAR
- Keith Sones, CABI
- Max Herriman, CFF
- Steven Humphreys, IFDC



SDG 2 targets covered

SDG 2.3 by 2030 double the agricultural productivity and the incomes of small-scale food producers, particularly women, indigenous peoples, family farmers, pastoralists and fishers, including through secure and equal access to land, other productive resources and inputs, knowledge, financial services, markets, and opportunities for value addition and non-farm employment.

SDG 2.4 by 2030 ensure sustainable food production and implement resilient agricultural practices that increase productivity and production, that help maintain ecosystems, that strengthen capacity for adaptation to climate change, extreme weather, drought, flooding and other disasters, and that progressively improve land and soil quality.

Key definitions of terms: Target 2.3

Productivity and incomes: assumed target meant both productivity and incomes doubled for small-scale food producers.

Production: yield, total amount produced.

Productivity: more complicated, relates to efficiency – return (output) on investment (input). Production relative to inputs – but relative to what inputs? land, labour or other inputs.

Also noted:

- Prices cannot be assumed to be constant – so increased production won't necessarily lead to increased incomes.
- Increased productivity does not necessarily mean more production – evidence that farmers may reduce area cultivated or fishers reduce number days fished in response to productivity increases.
- Is it practical to measure change in productivity?

Small-scale food producer: Depends where you are: e.g. USA would define this very differently from Kenya.

Also noted:

- Poverty not necessarily correlated with small-scale – can be small-scale but very profitable, in peri-urban areas.
- Farm size may change with time – e.g. Kenya farm sizes likely to increase with time.
- Small-scale focus – may not be best way to end hunger.

Secure and equal access to land: **Secure access:** Person farming the land has legally protected right to occupancy and use it. **Equal access:** no discrimination against anyone, including women, marginalised groups, etc. But does not imply access is free: everybody may not be able to afford the cost of accessing the land.

Non-farm employment: As relates to rural/agricultural sector – so includes peri-urban agriculture, but excludes non-farm employment divorced from agriculture/food production, e.g. job in the city.

Key definition of terms: Target 2.4

Sustainable: able to be done without jeopardising the potential for future generations to do the same thing. Financially, environmentally and socially sustainable.

Sustainable food production systems: can be continued at a given scale, indefinitely, from a financial, environmental and social perspective.

Resilient agricultural practices:

Shock-proof

Can be sustained against reasonable, periodic, external shocks, including natural and man-made but not, for example, major wars.

Also, not permanent change: so, if drought persists and an area becomes a desert, this is not an issue of resilience.

Land and soil quality: **Land** taken to mean landscape: includes trees, drainage, water courses, soil...

Soil quality: includes physical, chemical and biological properties

Challenges of achieving targets

NB: Realised can usefully read target as a goal plus some amplification text, e.g. '2.3 by 2030 double the agriculture productivity and the incomes of small-scale food producers' = goal, the rest is detail.

- Timeframe – over optimistic – did not attain MDGs, risk won't achieve these either.
- Global applicability is a challenge – from developed to least developed countries.
- Lack of clarity in definitions – e.g. double agriculture productivity – how will we know when we achieve that? Depends on criteria for productivity – output per unit land, labour...
- Lack of metrics – will make it hard to know if achieved or not.
- Lack of approach to measurement of achievements.
- Not self-evident how to meet the target – how to do it; no clear pathway how to achieve, especially within the timeframe.
- Difficulties in believing they are achievable.
- No independent mechanism for monitoring and reporting; rely on national governments.
- Behavioural change takes time – time-scale too short: this will require a change in mindset.
- Global decision making is driven by profit - does that approach need to change to realise the targets? If so, this is unrealistic and naïve. Primary mechanism for decision making is the bottom line. Achieving targets will hit profitability of those who are doing unsustainable things. Do targets adequately address the bottom line? Targets include sustainability, which is good business in the long run but may have cost in the shorter term.

3.2.3 Group 3: Target 2.5

Group members

- Daniel Karanja, CABI
- George Rothschild, Consultant
- Prasad Hendre, ICRAF
- Richard China, Bioversity International
- Thomas Dubois, World Vegetable Centre



SDG target covered

2.5 by 2030 maintain genetic diversity of seeds, cultivated plants, farmed and domesticated animals and their related wild species, including through soundly managed and diversified seed and plant banks at national, regional and international levels, and ensure access to and fair and equitable sharing of benefits arising from the utilization of genetic resources and associated traditional knowledge as internationally agreed.

Key elements of 2.5

- Maintenance of genetic diversity
- Benefits and access sharing
- Traditional knowledge

Definition of terms

Diversification: GAPAD definition should include genetic diversity and species diversity. There is mismatch between GAPAD definition of diversification and SDG 2 Target 2.5.

Need to recognize there will be different levels of diversification depending on the type of enterprise.

If we exclude key crops, e.g. rice, there may be challenge with buy in from some policy makers.

Consider how diversity relates to risk reduction.

Challenges of achieving 2.5

- There is huge diversity in the wild that is endangered, currently not available in the national gene banks.
- Limited capacity of national gene banks.
- Gaps in documentation of traditional knowledge.
- Creating new market opportunities.

3.2.4. Group 4: Targets 2a, b, c

Group members

- Annah Kyomuhangi, AU
- Cargele Masso, COMPRO
- Dennis Rangi, CABI
- George Osure, Syngenta Foundation
- John Lynam, Consultant
- Marita Dieling, AIRCA
- Roger Day, CABI



SDG2 targets covered

2a increase investment, including through enhanced international cooperation, in rural infrastructure, agricultural research and extension services, technology development, and plant and livestock gene banks to enhance agricultural productive capacity in developing countries, in particular in least developed countries.

2c adopt measures to ensure the proper functioning of food commodity markets and their derivatives, and facilitate timely access to market information, including on food reserves, in order to help limit extreme food price

Markets: Example traditional vegetables?

What is needed in terms of markets to promote 'new crops'?

- Move away from single commodity value chain approaches, rather private sector development.
- If you want diversity at farming level, you need a market development approach.
- As soon as farmers see a market, they will shift very quickly (even to non-agriculture income).
- Do markets by default lead to specialization and monocultures? Economies of scale, "comfort zone"?
- Market development is essential.
- Focus on high potential areas?
- Dependence on demand? High demand can push production to lower potential areas.
- But: is income the only motivation to diversify? No, can be for nutrition!

Investment:

- As soon as the market is there, investments will come.
- But where should the investment come from? Smallholders, local SMEs, ...
- Essential to do get the enabling environment!

Trade:

- Back to the question: AD at farm level? Or district or national level?
- Important to take local conditions (soil, markets, other conditions, ...) into account
- Diversification / specialization

Key points from plenary discussions, day 1

- Missing from presentations was mention of genetic diversity at level of crop varieties, which offer many solutions to challenges of climate change, pests and diseases, and meeting nutritional needs.
- Worldwide there are 6.5 million accessions saved in gene banks but farmers are sitting on huge wealth of genetic diversity and knowledge. We need novel ways of capturing this.
- Regarding drivers of change, the demand side is also important. Projections based on extrapolating dietary habits are frightening: too much meat, not enough fruit, vegetables and nuts. Needs behaviour change.
- Youth are a huge driver.
- 56% of world population will live in cities by 2030. Urban dwellers have less time to go and buy underutilized crops – they want fast foods. How can we market underutilized crops to urban dwellers? How can we create opportunities for youth? How can we make underutilized crops attractive for fast food consumption?
- Cities are dynamic and provide demand from rural areas. Municipal procurement systems can drive demand.
- Trend towards buying food in supermarkets but wet markets remain important for low income groups.
- Need to address mass migration to urban centres, although this also represents an economic opportunity. We should look at the new opportunities for small and medium sized enterprises in agriculture, including livestock. We need more modelling of economic opportunities.
- How can we set up systems, policies etc. to promote economic opportunities for agricultural diversification? Can models investigate different drivers and opportunities to meet development goals? Models are highly dependent on having good data.
- Need to move from sustenance to nourishment – providing nutrients not just filling people up. But this is complex to achieve on ground. How can we make simple messages for farmers, policy makers and funders?
- Monocropping is a modern phenomenon. Traditionally farmers had a diverse crop base. Also, three meals a day is a modern innovation – and there is a tendency to eat too much between those meals. In rural communities, people remember how people ate in the past. Some also make the link between modern diets and cancer and other diseases.
- Key to working with communities is to stay in the long term, beyond a 3-year project lifetime.

- Role of government is critical to enabling private sector to thrive. If governments are not backing the targets then will not achieve anything. Also, need to work closely with AU to get traction at continental level.
- It is an uphill task. Are we ensuring good linkages between information and policy? E.g. orange-fleshed sweetpotato: the research has been done but this is not yet linked to policy. How can this be scaled up? Researchers need to lose their silo way of working and become more development oriented. If there are no links with policy makers it can't become mainstream.
- Policy maker want to solve the problem of employment. We need to identify employment opportunities within our research initiatives by doing the necessary analyses.
- Availability of seeds for traditional crops and varieties is a problem.
- How do we communicate science and research to policy makers when they cannot understand complexities of the science? CFF have proposed developing a global agricultural index (analogous to the Richter scale for earthquakes) which would take into account sustainability, nutrition and biological diversity – going beyond yield. The index could then be used to inform rules, polices and targets.
- Research and development practitioners are talking to ourselves; need to talk to 'them' (governments). Even if information reaches governments it is usually too complicated. And even then the information may not be used in decision making!
- Many decisions made by government have political dimension – politicians want to be re-elected. As well as policy analysis need analysis of political economy. Also, need to empower beneficiaries to influence policies.
- Need to bring together agriculture, health and education departments to work together to promote eating nutritional food.
- There is a profitable opportunity for farmers to produce seed, e.g. while farmers can make USD 4200 per hectare producing amaranth for food, they could make USD 12,000 per hectare by producing seed under QDS system. Also, need to promote local and regional seed companies. In East Africa local seed companies exist but there are none in West Africa.
- We need a minister for nutrition, including agriculture, not a minister for agriculture.



4 GROUP WORK OUTPUTS: PROPOSED ACTION PLANS FOR GAPAD ON SDG2

4.1 Approach:

Participants divided into four working groups, each of which was tasked with addressing one or more of the eight targets that make up SDG 2. Groups were left to decide how best to tackle the task, the objective of which was to identify and propose priority actions needed to ensure that agriculture diversification contributes to the achievement of the targets. Although all the outputs generated by the groups delivered on the task at hand, the way they approached the task and reported their deliberations varied. Some groups first developed GAPAD targets, based on the SDG targets but focused on the role of agricultural diversification, before identifying priority activities. Following each group's presentation, in plenary other participants asked questions and made suggestions which the groups took on board to strengthen their final outputs. Below are presented these final, outputs from each group which have been only lightly edited.

4.2 Group work outputs

4.2.1 Group 1: Targets 2.1 and 2.2

Group members – see list in 3.2.1 above.

SDG 2 targets covered

SDG 2.1 by 2030 end hunger and ensure access by all people, in particular the poor and people in vulnerable situations including infants, to safe, nutritious and sufficient food all year round.

SDG 2.2 by 2030 end all forms of malnutrition, including achieving by 2025 the internationally agreed targets on stunting and wasting in children under five years of age, and address the nutritional needs of adolescent girls, pregnant and lactating women, and older persons.

Proposed GAPAD targets

Not completed

Proposed activities for both targets 2.1 and 2.2

Evidence based data:

- Food composition tables - there are existing data bases-where we have evidence.
- Recognize that FAO is helping countries to develop food composition tables and other agencies; GAPAD to encourage the countries to use the food composition tables.
- Ensure there is consistency across the globe – methodology.
- GAPAD to identify within 1 year and support good consumption studies across the globe within 5 years.

Agricultural diversification in government investment plans:

- Fitting into existing government policies/investment plans, mainstream agricultural diversification in the nutrition focused organizations ([SUN](#), [REACH](#), [Zero Hunger](#), [1000 Days](#) etc.) on going-develop a strategy at stages at specific regions-countries. Increase resilience and farm community in the face of a warm climate. Start pilot with one country by 2018
- Identify respected persons at different levels (grassroots, political, academia) to champion nutrition
- GAPAD to develop a policy paper to look at integrated nutrition in agricultural diversification

About indicators:

- Develop a set of complementary indicators to look deeper into nutrition issues. Consider developing country specific indicators that lead to the SDG 2.1, 2.1 indicators – like intermediate outcomes, dietary intake indicators, micronutrient deficiency diseases (MDDs), i.e. understanding the different sources of nutrients by 2018

Holistic and balanced agricultural diversification:

- Promote wholesome dietary diversity approach; consider how to diversify foods and not just promoting a single nutrient. Identify a range of locally available foods to meet the nutrient requirements
- Consider food safety issues/ hygiene

Understand who are the actors in nutrition and coordinate with them:

- Enhance and strengthen agricultural diversification people and nutritionists to bring nutrition together across sectors, e.g. in Ethiopia and Zambia
- Some tested projects (Nepal) have integrated education/health/agriculture and this has worked
- GAPAD to identify strategic partnerships

Women’s empowerment:

- GAPAD to identify how to support women technologies and income to influence diets – identify tried/tested/working technologies
- GAPAD has potential to link countries to these technologies e.g. the tropical fruits –continuous

Youth empowerment:

- Capacity development to reenergize agriculture among the youth with machinery and markets - continuous

4.2.2 Group 2: Targets 2.3 and 2.4

Group members – see list in 3.2.2, above

SDG 2 targets covered

SDG 2.3 by 2030 double the agricultural productivity and the incomes of small-scale food producers, particularly women, indigenous peoples, family farmers, pastoralists and fishers, including through secure and equal access to land, other productive resources and inputs, knowledge, financial services, markets, and opportunities for value addition and non-farm employment.

SDG 2.4 by 2030 ensure sustainable food production and implement resilient agricultural practices that increase productivity and production, that help maintain ecosystems, that strengthen capacity for adaptation to climate change, extreme weather, drought, flooding and other disasters, and that progressively improve land and soil quality.

Proposed GAPAD targets

GAPAD target 2.3: by 2030, agricultural diversification is making a critical contribution to the doubling of agricultural productivity and incomes of small-scale food producers.

GAPAD target 2.4: by 2030, sustainable food production systems and resilient agricultural practices are achieved with agricultural diversification making a critical contribution.

Proposed activities for targets 2.3 and 2.4

All proposed activities are considered to relate to both targets.

Policy and evidence:

By when	What
2017	Develop and publish GAPAD guidelines and principles on agricultural diversification <ul style="list-style-type: none"> • Define terms used in SDG 2030 SDG2
2017	Develop and publish a 2-page policy brief based on guidelines and principles for policymakers and investors
2019	UN to host international conference on agricultural diversification - United Nations Conference on Agricultural Diversification (UNCAD) - at which governments pledge support to new Agricultural Diversification Fund (see <i>Commercialisation</i> , below)
2022	Protocol to be proposed to Convention on Biological Diversity (CBD) on agri-biodiversity

Coordination and planning:

2016	Recognise Nairobi Roundtable Forum as GAPAD SDG2 Taskforce
2017	GAPAD secretariat to establish and coordinate network of international, regional and national organisations with sectoral expertise in agricultural diversification
2022	GAPAD signatory countries lodge their national action plans on the contribution of agricultural diversification to achievement of SDA 2030 SDG2. To support this, GAPAD will: <ul style="list-style-type: none"> • Explore/document successful agricultural diversification practices

	<ul style="list-style-type: none"> • Carryout risk/benefit analysis of agricultural diversification practices for small-scale farmers • Develop/adapt agricultural diversification models that can be up-scaled
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Knowledge management:

2023	<p>Establish a Global Agriculture Knowledge Base (GAKB) that provides data and knowledge on target neglected and underutilised species</p> <ul style="list-style-type: none"> • GAKB to be continuously expanded and improved as a global project under a coordination body
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Monitoring and evaluation:

2017	Define the criteria against which agriculture productivity will be measured, e.g. output per hectare
2017	Develop and publish an M&E roadmap including tools, approaches, events and responsibilities
2018	Develop a Global Agricultural Index with easily understandable scales for sustainability, agricultural biodiversity and nutrition

Operational practices:

2022	Develop and publish international standards of best practice for integrated soil fertility management (ISFM), integrated pest management (IPM) and agricultural water management, specifying contribution that can be made by agricultural diversification
2025	<p>Implement agricultural diversification measures that reduce post-harvest and storage losses to 30% or less:</p> <ul style="list-style-type: none"> • Address knowledge gap • Make use of underutilised storage facilities • Invest in new storage/processing facilities • Consider loss of quality (nutrients and food safety) as well as absolute loss
2030	<p>At least 5% of small-scale food producers will have adopted additional agricultural diversification practices through:</p> <ul style="list-style-type: none"> • Awareness raising activities • Enabling access to agricultural diversification relevant inputs and knowledge <p>A survey will be conducted by 2030 to assess rate of adoption</p>

Commercialisation:

2018	Identify and document measures to incentivise input supply channels to support agricultural diversification, including seeds and other planting materials
2018	Develop a roadmap to strengthen markets and value-addition opportunities for agricultural diversification crops
2019	<p>Secure commitment at UNCAD (see <i>Policy and evidence</i>, above) to an Agricultural Diversification Fund that will:</p> <ul style="list-style-type: none"> • Directly fund projects, businesses, organisation • Mitigate credit risk for microfinance providers and saving and credit cooperative societies • Fund to be administered by an established international body, such as IFAD
2020	Link with climate change funds (Verified Carbon Standard , Gold Standard) to channel carbon credits to small-scale farmers implementing agricultural diversification

4.2.3 Group 3: Target 2.5

Group members – see list in 3.2.3, above

SDG target covered

2.5 by 2030 maintain genetic diversity of seeds, cultivated plants, farmed and domesticated animals and their related wild species, including through soundly managed and diversified seed and plant banks at national, regional and international levels, and ensure access to and fair and equitable sharing of benefits

arising from the utilization of genetic resources and associated traditional knowledge as internationally agreed.

Proposed GAPAD targets: Not completed

Proposed activities for target 2.5

By when	What	
2020	Maintaining genetic and agricultural biodiversity	Capacity building on in situ and ex situ maintenance of genetic agricultural biodiversity <ul style="list-style-type: none"> • Technical capacity building on ex situ and in situ conservation: on genetic (and agricultural biodiversity) collection, storage, generation, documentation,... • Focus on neglected and underutilized species and crops for the future
2020		Measure and track agricultural biodiversity <ul style="list-style-type: none"> • Develop prototype agrobiodiversity index tool to measure biodiversity • NB: currently being done by Bioversity: seed systems, production systems, consumption systems • Goal: come up with a list of indicators • Test: with private sector, in 7 countries
2020		Cost benefit analysis of genetic and agricultural biodiversity - generate evidence for investment <ul style="list-style-type: none"> • Goal: promote investments from an investor point of view • Existing literature review • Case studies • Will guide prioritization • Sharing of case studies: => 'metacase'
2020	Benefit sharing and access	Awareness and capacity building at national level on international treaties on use and benefit sharing <ul style="list-style-type: none"> • Goal: domestication of existing treaties and international agreements treaties into national policies and legal frameworks (bottom up) • How: strengthening of national partners to give a voice in the international arena for benefits and access sharing • Entry point: Treaty • Note: may need outside expertise, as is a 'wasp nest'
2020	Traditional Knowledge	International year of neglected and underutilized species/crops for the future
2020		Establish a knowledge platform for documenting and sharing tradition knowledge

Who?

- FAO could play key role in convening national partners / international platform
- GAPAD to play the implementation role, especially capacity building and technical

Focus throughout: mainly underutilized crops, not the 'big four'?

Risk and mitigation measures

- Political will
- Use participatory process

4.2.4 Group 4: Targets 2a, b, c

Note: only 2a and 2c were tackled by the group.

Group members - see list in 3.2.4, above

SDG2 targets covered

2a increase investment, including through enhanced international cooperation, in rural infrastructure, agricultural research and extension services, technology development, and plant and livestock gene banks to enhance agricultural productive capacity in developing countries, in particular in least developed countries.

2c adopt measures to ensure the proper functioning of food commodity markets and their derivatives, and facilitate timely access to market information, including on food reserves, in order to help limit extreme food price

Proposed GAPAD targets

2a by 2030 double investment in agricultural R&D and increase funding to agricultural diversification R&D in particular in developing and least developed countries.

2c adopt measures that assure that markets provide incentives for maintaining AD, particularly development of markets for underutilized crops.

Proposed activities for targets 2.a and 2c

GAPADised Target 2a "By 2030 double investment in Agriculture R&D and increase funding to AD R&D in particular in developing and least developed countries"	Who	By when
1) Review of national, regional and global research agendas' coverage of AD, as well as gaps and opportunities <i>INDICATORS: Review papers</i>	GAPAD Secretariat as coordinator, partners GFAR, GFRAS and regional bodies)	end 2017
2) Develop strategies to target investment (research and extension) into AD <i>INDICATORS: Strategy papers</i>		end 2018
3) Establish and engage a mechanism/ body of steering and oversight of action 2) <i>INDICATORS:</i> - <i>Network established</i> - <i>M&E framework for implementation of the strategy</i>		Est. by mid 2017, operation ongoing
Risks: U\$ (funds) ☹️ (commitment) 🕒 (time)		
GAPADised Target 2c Adopt measures that assure that markets provide incentives for maintaining AD, particularly development of markets for underutilized crops.	Who	By when
A) MARKETS FOR UUC		
1. Survey approaches & methodologies of market development for UUC <i>INDICATORS: survey report</i>	Experts like CFF, ICRAF, Technoserve	Mid 2018
2. Develop pilot projects for market development <i>INDICATORS: projects' reports</i>	GAPAD Secr., "big players" (int. trade companies)	Mid 2018

<p>3. Development of strategies for out- / up-scaling market development (examples for strategies: stimulation of demand, consumer behavior, processing, postharvest, market aggregation, ...) INDICATORS: strategy papers</p>		End 2018
B) INCENTIVES FOR MAINTAINING AD		
<p>4) Analysis of potential market intervention to encourage / maintain AD INDICATOR: Analysis report RISK: Findings not conducive to AD</p>	IFPRI, ASTI	End 2017

5 CLOSING SESSION

5.1 Closing remarks: Ali Sayad Azam, CEO of CFF

In his closing remarks, the CEO of CFF described how GAPAD fitted into the bigger picture, reviewed some predictions of the implications of climate change and spelled out the way forward.

Key message: SDG 1, 'end poverty in all its forms, everywhere' is overwhelming ambitious but has been signed off by the world's governments. For GAPAD it is better to be ambitious and fail than to set the bar low but not transform agriculture.

- By 2030, 9 out of 10 major crops will experience reduced or stagnant growth rates, while average prices will increase dramatically.
- 'New crop varieties can't keep up with global warming'. Global crop yields could fall within a decade unless action is taken to speed up the introduction of new varieties.
- The outputs of the Webinar, this roundtable forum and ongoing efforts of the task force will all help inform the development of a GAPAD investment template for submission to UNSDA 2030 secretariat.
- All roundtable participants are invited to continue to be involved by being members of the taskforce for the SDG2 action plan.



In the discussions that followed, the main points to emerge were:

- The SDGs are owned by UN agencies. How can we influence UN processes and country-level actions?
- In international relations and legal terms, we are taking a second track initiative (non-governmental) and transforming it into a first track initiative (governmental). The process from second to first track is complex but there are examples of success, e.g. the precautionary approach arose from a second track initiative but has been picked up by many first track initiatives, also the Coral Triangle initiative, which began as a WWF concept but was ratified by six governments.
- Governments look to AIRCA and others to see if ideas are good, building acceptance and knowledge, before transforming to first track.
- GAPAD have governments involved from the start with a view to having GAPAD picked up to first track as a government plan.
- GAPAD will influence how funds are spent; this won't necessarily be new funds.
- The plan is ambitious – but it must be so.
- Most people realise we can't go on farming based on mono-cropping but if we don't have a plan offering a coherent alternative to business as usual nothing will be done.
- Is it an investment template or a decision tree? A: It is a credible statement of what can be done. The template conceptualises activities for organisations and countries together with expected outcomes. This provides a structure and a plan of how to do it. Countries can then compare their investment plans to the template.

5.2 Closing remarks: Dennis Rangi, DG Development, CABI

In his closing remarks the DG Development, CABI thanked the organising team and participants. He drew attention to the presence throughout the two-day roundtable of the AUC Commissioner for Agriculture, a level of commitment he had never see before from a distinguished guest. He suggested this reflected the seriousness with which the AUC were taking GAPAD: mainstreaming GAPAD within AUC was important, a task he delegated to the Commissioner.



5.3 Closing remarks: H.E. Rhoda Peace Tumusiime, Commissioner for Rural Economy and Agriculture at the AUC

In her closing remarks, the Commissioner confirmed she was 'still on board' with the GAPAD initiative. She suggested that governments were key partners in the initiative and the sooner they were brought on board the better. Also, key individuals should be targeted to act as champions to influence adoption by other countries and institutions.

LIST OF PARTICIPANTS

Full Name	Designation	Organisation	Location
Prof Ali Azam Sayed	CEO	CFF	Kuala Lumpur, Malaysia
Dr Max Herriman	Programme Director	CFF	Kuala Lumpur, Malaysia
Dr Dyno Keatinge	Ambassador Emeritus	AIRCA	UK
Dr Thomas Dubois	Regional Director, ESA	WorldVeg	Arusha, Tanzania
Dr George Sempeho	Senior SDG Advisor	SDGC	Kigali, Rwanda
Dr Peace Rhoda Tumusiime	Commissioner for Rural Economy and Agriculture	AU	Addis Ababa, Ethiopia
Dr Timothy Sulser	Scientist, Global Futures & Strategic Foresight	IFPRI	Washington DC
Dr George Rothschild	Consultant	Consultant	UK
Dr Richard China	Director, Strategic Partnerships	Biodiversity International	Rome, Italy
Dr Jayaraman Durai	Project Manager	INBAR	Madagascar
Dr Roger Day	SPS Coordinator	CABI	UK
Dr Keith Sones	Consultant	Rapporteur	UK
Prof Ruth Oniang'o	Founder/ CABI Board Member	Rural Outreach Program Africa	Nairobi, Kenya
Dr James Nyoro	Senior Advisor	IDEAfrica	Nairobi, Kenya
Dr Esther B. Omosa	AVCD Senior Nutrition Specialist	ILRI	Nairobi, Kenya
Dr Steven Humphreys	Ag. Director, ESA	IFDC	Nairobi, Kenya
Dr Celine Termote	Associate Scientist, Agricultural biodiversity and dietary diversity	Biodiversity International	Nairobi, Kenya
Dr Ephraim Chabayanzara	Regional Technical Advisor for Agriculture – East Africa	CRS	Nairobi, Kenya
Dr George Adhanja	CEO	National Council of NGOs	Nairobi, Kenya
Dr John Lynam	Consultant	Consultant	Nairobi, Kenya
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Ms Annah Kyomuhangi	Special Assistant to the Commissioner of Rural Economy and Agriculture	AU	Nairobi, Kenya
Ms Marita Dieling	Executive Secretary	AIRCA	Nairobi, Kenya
Dr Dennis Rang	Director General, Development	CABI	Nairobi, Kenya
Mr Morris Akiri	Regional Director	CABI	Nairobi, Kenya
Dr George Oduor	Deputy Director, Research	CABI	Nairobi, Kenya
Dr Daniel Karanja	Deputy Director, Development	CABI	Nairobi, Kenya
Mr David Onyango	Communications Expert	CABI	Nairobi, Kenya
Ms Peace Tusasirwe	Exec. Assistant to DG, Devt	CABI	Nairobi, Kenya

PROGRAMME**Moderator: Max Herriman, Crops for the Future**

Tuesday 25th October	
08.30 – 09.00	Registration
09.00 – 09.10	Welcome Remarks – Dr Dennis Rangi (DG, Development, CABI)
09.10 – 09.40	Keynote Address – GAPAD-AIRCA and SDG2: From Sustenance to complete Nourishment in a changing climate – Dr Dyno Keatinge
09.40 – 10.00	Introductions
10.00 – 10.30	Webinar content and Feedback – Dr George Oduor (CABI)
10.30 – 11.00	COFFEE BREAK & PHOTO SESSION
	Presentations on SDG2 – Understanding the issues
11.00 – 11.20	Ending Hunger and Malnutrition, case of Africa – Dr James Nyoro (Consultant)
11.20 – 11.40	Intensifying sustainable agricultural productivity – Dr Timothy Sulser (IFPRI)
11.40 – 12.00	Genetic diversity for sustaining agricultural diversity – Dr Thomas Dubois (AVRDC)
12.00 – 12.20	Increasing investments, facilitating trade and strengthening commodity market systems – Dr Roger Day (CABI)
12.20 – 12.40	Contributions by Professor Ruth Oninag'o (nutrition) Contribution by Dr George Sempeho (SDG Centre, Kigali)
12.40 – 13.00	Discussions
13.00 - 14.00	LUNCH
14.00 – 14.30	Moderator introduction to breakout discussions
14.30 – 16.00	Breakout Discussions on definition and challenges of achieving Targets of SDG2 .Targets 2.1 and 2.2 – hunger and malnutrition Targets 2.3 and 2.4 – agricultural productivity Target 2.5 – genetic resource and diversity Targets 2a, 2b and 2c – investment, trade and markets
16.00 – 16.30	COFFEE BREAK
16.30 – 17.30	Presentation of Rapporteur Notes on breakout sessions
19.00	Cocktail
Wednesday 26th October	
09.00 – 09.20	Summary of Day 1 and introduction to breakout sessions – Moderator
09.20 – 12.30	Breakout sessions (including coffee break), same groups as above but discussing proposed action plans for GAPAD on SDG2, to cover: <i>By when and who; to do what; logical sequence and priority of what to be achieved</i>
12.30 – 13.30	LUNCH
13.30 – 15.00	Presentation of Rapporteur Notes on breakout sessions
15.00 – 15.30	COFFEE BREAK
15.30 – 16.30	Discussions and Way Forward
16.30 – 17.00	Closing remarks by Prof Sayed Azam Ali (CFF), Dr Dennis Rangi (CABI) and Dr Peace Rhoda Tumusiime (AUC)