PROJECT CHARTER – Climate-Smart Agriculture Capacity Building

The GACSA Climate Smart Capacity Building proposal includes two different projects, namely the (1) Climate Smart Agriculture e-learning Course (page 1-6) and the (2) GACSA App for Farmers (page 7-14).

Both of the zero drafts are included in this document.

Climate-Smart Agriculture E-learning Course

Project Name: GACSA Climate-Smart Capacity Building	Project Manager: Ms. Famke van der Meer
Starting Date: 21 November 2022	Last revision Date: under revision

1. Project Description

Through the GACSA Survey in 2019-2020, GACSA members have identified a lack of development opportunities for knowledge sharing of CSA 'good practices'.[1] Therefore, the GACSA Facilitation Unit (FU) is proposing the development of a "*Climate Smart Agriculture E-learning course*" aimed at training young future leaders with a solid background in CSA, as one possibility to address these capacity development needs. The online course will be designed in collaboration with GACSA members. The FU will predominantly rely on the expertise of the Universities of Wageningen, Leeds and Cornell University, who have done extensive research within this field. The course itself will be divided into five specific modules which will be explained in more detail in the 'project scope' section of this proposal.

The course itself will be piloted in the second semester of 2023 with one of GACSA's partner universities, for example Cornell University. If successful, the project will be scaled up. Firstly, to other GACSA partners and later globally.

2. Objectives

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[1] Allison Chatrychan, Danielle Berkowitz-Sklar and others, *Scaling-Up Climate-Smart Agriculture (CSA) Globally through GACSA*, Global Alliance for Climate-Smart Agriculture, November 2020. < https://www.fao.org/fileadmin/user_upload/gacsa/GACSA_Survey_Report_FINAL.pdf > [Accessed 11 January 2023].

- The course aims at training young farmers, young adults that might enter the agriculture field (students), policy makers and investors on CSA approaches to address the capacity development needs identified by the GACSA members and create future leaders with a solid background in CSA.
- The course focusses on spreading awareness about climate change science, impacts, and CSA solutions to drive, improve and develop local skills and foster communication so that stakeholders can make informed development choices.

3. Scope

DESIGN (Annex 1)
The course will be accessible on an online platform (such as EdX) to anyone who is interested in CSA approaches.

The course will be divided into five modules which will each include a set of online pre-recorded lectures, GACSA case studies and a final test. Participants will need to complete and pass all these small tests with at least 70% to get the GACSA future leaders certificate at the end.

When hosted by a (higher or tertiary) education institution the course must comply with the internal systems and procedures, meaning that for example extra written assignments and group work could be added to complement the online learning materials.

The pre-recorded modules will include:
1. Introduction to CSA (Historical background)
2. CSA Scientific foundation (Environmental science and geographical foundation, health benefits for people and planet).
3. GACSA Case Studies, which will be specialized according to region, agricultural sector or both.
   a. Within this module online participants can choose their own specialization according to their interest. This module will subsequently teach them about 3 successful CSA practices and 1 failed CSA practice within that specialization and how to (not) implement them.
      i. Participants can choose either 1 Agricultural Sector (eg. 4 crop specific case studies from different regions); 1 Region (eg. 4 case studies from that region focusing on different agricultural sectors); 1 Sector & 1 Region (eg. 4 case studies focusing on that specific sector and region).
      ii. The assessment will include the evaluation of a 5th case study within their chosen specification.
         1. For participants online this will be an online, multiple choice evaluation.
         2. For students at hosting institutions this will be complemented by a written report. Moreover, when the module is offered by a hosting institution they can specify the specialization students need to choose.
4. CSA Inter/national Policies
   a. International and national perspectives on enabling environment.[2]
5. CSA Finance
   a. Role of entrepreneurship, innovation and economics in CSA, including perspectives from the private sector on financing CSA projects.[3]

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[2] The Graduate School for Production Ecology & Resource Conservation, 'Climate-Smart Agriculture. From fundamentals to application.'< https://www.pe-rc.nl/climate-smart-agriculture> [Accessed 21 November 2022].
[3] The Graduate School for Production Ecology & Resource Conservation, 'Climate-Smart Agriculture. From fundamentals to application.'< https://www.pe-rc.nl/climate-smart-agriculture> [Accessed 21 November 2022].

In addition to the online trainings, the GACSA Regional Alliances will be present at least two guest speakers from their region to local hosting institutions, delivering the course, during the course's duration. These lectures will tackle the topic of CSA in an interdisciplinary and intergenerational way through bringing together young students and practitioners within the same classroom.

Ideally these guest lectures will be held in-person at the hosting institution and available to anyone enrolled in the course from that institution as well as those that choose for that specific regional specialization. However, to ensure that everyone indeed has access to this information (especially when they cannot attend the lecture in-person), the lecture will be recorded and posted within the e-learning environment of the course, providing participants also with a forum to ask questions.

Members from the regional alliances will be responsible for arranging logistics for local farmers to deliver these lectures. The guest lecturers will be GACSA members (specifically young start-ups) and farmers from local communities who have experience with CSA, to ensure an intergenerational exchange.

IMPLEMENTATION

As previously mentioned the course will be available online to anyone interested in learning more about CSA.

Additionally, the course itself will be piloted in the second semester of 2023 in one of GACSA's partner universities, for example with Cornell University. If successful, the project will be scaled up to other GACSA partners and later globally.

This dual format will ensure that the course is available to:
1. All students attending the participating university. It is up to the universities themselves whether they offer it to their students as either:
    a. Part of their core curriculum (accredit it) in the form of a mandatory or optional module; or
    b. Offer it as a supplementary e-learning course which students can enroll in on a voluntary basis.
2. Anyone interested in CSA, but specifically farmers, investors and policy-makers interested in implementing or supporting CSA practices, who would like more tailored information.
    a. To reach (rural) farmers the FU will work closely together with local governments, NGO's and FAO Global Farmer Field School Platform to raise awareness about this unique e-learning experience.

COMPLETION

All participants will receive a GACSA (and other involved partners supported) certificate upon successful completion of all the course's components.

4. Target Audience

Young adults who may be enticed to enter the agriculture field (university students), young farmers

5. Timetable

The idea is to develop a course that will span across 6 months.

Enrolment for the course will be open twice a year for a September session and a session in March.

6. Costs

The program cost is to be developed, but should include IT support, staffing and resources.

The cost to develop one module for the FAO e-learning platform are specified in the Annex 2. Based on this information it can be concluded that just the development of 5 online modules will be around $37.450 USD. This however doesn't take into account the complexity of the specialized third module GACSA would like to offer.

7. Risks

	LOW	MEDIUM	HIGH	Mitigating Actions
Difficulty of getting young farmers to take the online course		X		The regional alliances will work with local NGO's to provide farmers with transport to the location or if not possible, a location and materials to record lectures online.
Lack of engagement with the course.	X			We will work closely together with Regional Alliances and NGO's to raise awareness about the e-learning course.
Lack of Internet/Phone/Computer Connectivity to take the Course		X		Consider offering the course at Extension Offices, 1 computer with farmers in person.

8. Partners

- Facilitation Unit
- Member Universities
- Regional Alliances
- Action Groups
- FAO

Annex 1.

CSA E-learning Course

Module	Aries	Cam	Kyle
Specialization	**Region: Africa** **Sector: None**	**Region: None** **Sector: Crops**	**Region: Africa** **Sector: Crops**
1 Introduction to CSA	The historical development of CSA.	The historical development of CSA.	The historical development of CSA.
2 CSA Science	The scientific foundation behind CSA practices.	The scientific foundation behind CSA practices.	The scientific foundation behind CSA practices.
3 GACSA Case Studies	• 1 Successful CSA Case Study from Africa: Livestock • 1 Successful CSA Case Study from Africa: Crops • 1 Successful CSA Case Study from Arica: Fisheries • 1 Failed CSA Case Study from Africa: Forestry	• 1 Successful CSA Case Study from Africa: Crops • 1 Successful CSA Case Study from Asia: Crops • 1 Successful CSA Case Study from Latin America: Crops • 1 Failed CSA Case Study from Middle East	• 1 Successful CSA Case Study from Africa: Crops • 1 Successful CSA Case Study from Africa: Crops • 1 Successful CSA Case Study from Africa: Crops • 1 Failed CSA Case Study from Africa: Crops
4 CSA Inter/national Policies	The National and International environment when it comes to enabling CSA approaches.	The National and International environment when it comes to enabling CSA approaches.	The National and International environment when it comes to enabling CSA approaches.
5 CSA Finance	Introduction to the role of entrepreneurship, innovation and economics in CSA.	Introduction to the role of entrepreneurship, innovation and economics in CSA.	Introduction to the role of entrepreneurship, innovation and economics in CSA.

Annex 2.

Activity	Activity Specialisation	Days	Sub-total (USD)/day	Sub-total (USD)
1	Instructional Design (FAO, PSPC 12 days for an average lesson)	12	$340	$4080
2	Creation of interactive lessons (PSPC 8 days for an average lesson)	8	$270	$2160
3	Courseware Development, testing for Internet delivery (online, downloadable, SCORM versions)	2	$450	$900
4	Technical language editing 1 day per lesson	1	$350	$350
TOTAL				$7490

GACSA App for Farmers

Project Name: GACSA App for Farmers	Project Manager: Ms. Famke van der Meer
Starting Date: 21 November 2022	Last Revision Date: under revision

1. Project Description

Climate change is increasingly undermining agricultural practices around the globe, presenting a threat to our food security and the resilience of our food and ecosystems. Climate Smart Agriculture (CSA) focusses on transforming our food systems to address global warming. CSA approaches are designed to 'sustainably increase agricultural productivity and incomes; adapt and build resilience to climate change; and reduce and/or remove greenhouse gas emissions, where possible'.[4]

Despite the urgent necessity to implement CSA approaches on a global level, adoption of such practices has been slow. Scholars have identified several reasons for this phenomenon, pointing to, among other things, knowledge, financial, and institutional constraints.[5] However, a systematic review of studies evaluating the implementation of CSA practices in Africa has highlighted how one of the major barriers to the adoption of CSA practices in the region was the exclusion of farmers' local knowledge. CSA approaches can rely on new technologies, ignoring local customs, and are often implemented using a top-down approach, without farmers input. Subsequently, many farmers are hesitant to adopt these new innovations. To tackle this problem this study suggested to work together with farmers using 'participatory technology development approaches'.

The GACSA Survey of Members conducted in 2019-2020 reported similar findings.[6] When asked about which initiatives were needed to overcome knowledge barriers regarding CSA implementation, the most frequent answers include the need for more capacity building projects and farmer-to-farmer information networks. Based on these results, the authors recommended to need for more collaborative approaches to improve farmer's uptake of CSA approaches within their own businesses. In addition, they pointed out that this peer-to-peer networks could support the implementation of other capacity building activities, as it fosters relationships of trust which local farmers.

Following the identification of this knowledge gap, the GACSA Facilitation Unit (FU) would like to propose the development of "GACSA CSA App for Farmers" (Final Name TBD), which will be implemented as an application for mobile phones.

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[4] Food and Agricultural Organization of the United Nations, 'Climate Smart Agriculture', Food and Agricultural Organization of the United Nations <https://www.fao.org/climate-smart-agriculture/en/ > [Accessed 12 January 2023].

[5] Ayorinde Ogunyiola, Maaz Gardezi & Sumit Vij, 'Smallholder farmers' engagement with climate smart agriculture in Africa: role of local knowledge and upscaling', in *Climate Policy*, 22 (4), (2022); 411-426, 412.

[6] Allison Chatrychan, Danielle Berkowitz-Sklar and others, 'Scaling-Up Climate-Smart Agriculture (CSA) Globally through GACSA', Global Alliance for Climate-Smart Agriculture, November 2020. < https://www.fao.org/fileadmin/user_upload/gacsa/GACSA_Survey_Report_FINAL.pdf > [Accessed 12 January 2023].

The app will function as a peer-to-peer knowledge sharing, capacity building and networking platform, which will allow farmers to connect and interact with each other, as well as with local agriculture researchers, policymakers and investors through the Discussion Portal. In addition, the knowledge portal would address the specific capacity development needs of farmers, tailored to their specific region. So did one study among young female agricultural entrepreneurs in sub-Saharan Africa found that, besides the financial and discriminatory challenges, these women were also facing lack of training, mentoring and networking opportunities when setting up their businesses.[7] The purpose of the knowledge portal would subsequently be to tackle this lack of (regional) support systems available to farmers, providing them with CSA case studies, relevant regional data and capacity building trainings.

This application would thus allow farmers to receive tailored information about CSA practices relevant to their agricultural sector and region as well as enable them to connect and interact with likeminded local farmers and professionals. In doing so, the app is in line with IFAD's recommendations for successful interventions to support smallholder commodity farmers. They emphasize that most successful interventions are characterized by a multidimensional and customized approach, focussing on connecting and partnering farmers with each other and public and private sector institutions and sponsors.[8]

2. Objectives

- Scale up CSA practices using a geographically tailored approach.
- Foster peer-to-peer connections within regional and national farmer communities to exchange knowledge and experiences.
- Promote capacity building opportunities through signposting farmers to trainings and skill sessions, improving knowledge-sharing networks.

3. Scope

OVERVIEW
GACSA will work with its members to conduct a full needs assessment. Based on identified needs, we will develop an app that will consist of two components: a knowledge portal and a discussion platform. Users will be provided tailored information based on their registration details.

Before finalising the app's design and features, GACSA will conduct an extensive stakeholder analysis among our end users, namely farmers from regions covered by GACSA's Regional Alliances, to learn about their specific needs and to ensure that these are considered when designing the app. GACSA will also assess what other CSA apps are un use, what purposes they serve and what entities are involved.

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[7] Bayer Foundation, 'White Paper. Accelerating Change In Sub-Saharan Africa By Supporting Female Entrepreneurs', Bayer Foundation (2022). < https://www.bayer-foundation.com/sites/g/files/vrxlpx38116/files/2022-09/2022%20White%20Paper%20Bayer%20Foundation.pdf> [Accessed 21 November 2022]. p. 19.
[8] Yuca Waarts, Valerie Janssen, and other, 'Research Series 80: How can different types of smallholder commodity farmers be supported to achieve a living income?', International Fund for Agricultural Development (june 2022) <https://www.ifad.org/documents/38714170/45699094/80_research.pdf/9ed9b2f8-859c-5cdf-338e-1b707113d6b2?t=1654752659389> [Accessed 21 November 2022]. pp. 8-9.

The design, information, implementation, and operation will be carried out in collaboration with the GACSA Action Groups, Regional Alliances and other interested partners and potential sponsors. We will specifically consult software engineers and computer scientists with a background in Agriculture to help us design and implement the software.

See specific sections for more detailed information about an example of the app's design and the annex for a mock-up.

LOGIN SCREEN (Annex 1)
After downloading the app, users will be presented with a registration screen. Here they will be asked to fill in the following details:
- Function (farmer, NGO, investor, policymaker)
- Agricultural sector (crops, livestock, fisheries, forestry)
- Gender (male, female)
- Region (e.g. Africa, Asia, Latin America, Middle East). This could for example be achieved through using the user's postal code.

Based on this information, the app will provide farmers with tailored information.

These specific categories are not finalised yet but serve as an example to illustrate how the app would work.

KNOWLEDGE PORTAL (Annex 2)
The knowledge portal will focus on capacity building. It will include two sections:
1. Examples of CSA good practices from the region and agricultural sector of the farmer's choice (Annex 4). This means information about the practices themselves, how they work and how to implement them on your own farm.
2. Signpost of training opportunities. This section will present the different training opportunities for farmers (interested in CSA) already out there. The training opportunities will be divided in 3 categories:
   - Soft skills (communication, leadership etc);
   - CSA specific (e-learning) courses;
   - Enabling environment hub, which will include courses on financial awareness and how the public and private sector could help you in realising your CSA farm.

The information for this knowledge portal will be acquired through collaboration with the FAO, GACSA Action Groups and Regional Alliances.
- FAO information available:
  - Policy Support: https://www.fao.org/climate-smart-agriculture/policies-planning/planning/en/
  - Financial Support: https://www.fao.org/climate-smart-agriculture/policies-planning/policy/en/
  - Case Studies 2021: https://www.fao.org/3/cb5359en/cb5359en.pdf
  - Lessons learned from the field: https://www.fao.org/3/i2207e/i2207e.pdf
  - Country Programming Framework (CPF's)
- The Knowledge Action Group and Regional Alliances and partner universities will help with the first section of the Knowledge Portal, providing us with information about CSA successful practices and implementations within the regions.
- The three Action Groups will support the implementation of the second section of the knowledge portal, providing information on the relevant training opportunities out there and how to access them.
  - The Knowledge Action Group will act as a filter to select the best case studies.

DISCUSSION PORTAL (Annex 3)

Based on their registration details, users of the application will also be placed in specific discussion fora. The implementation of these discussion fora is a two-step process (Annex 5):

1. The application will be distributed, via the Regional Alliances, to national representatives. Per region there will be one group chat with several national representatives of countries within that region. The regional alliance focal point will serve as a facilitator.
2. Following this first step, the regional group chats will appoint focal points for the different nations. These national representatives will subsequently create their own group chats and distribute this application to farmers, farmers' organisations and NGO's within their country, starting a second layer of discussions.
3. (A third layer could be added on to the network, connecting farmers in a local setting. Within the second layer, national representatives would then allocate local representatives, who would start a third layer of group chats for farmers from that specific region within the country.)

The aim of these discussion fora is to connect farmers with each other as well as with relevant organisations and institutions. In doing so the discussion for a serve as a peer-to-peer learning environment, enabling a knowledge exchange on CSA practices, that is tailored to that specific region and agricultural sector. Moreover, it would provide farmers with networking opportunities from within their local communities. In addition, it opens up possibilities for starting local mentorship programmes, connecting young farmers to more experienced agricultural practitioners within their local area. This specific component will be further explored and developed after the implementation of this application.

4. Target Audience

- (Young) Farmers
- Farmers' Organisations
- NGO's
- (National) Investors
- Policymakers

5. Timetable

ACTIVITIES	TIMELINE	RESPONSIBLE TEAMS
1	Needs Assessment & Stakeholder Analysis	FU
2	Collect Information on CSA practices	FU; Regional Alliances.
3	Collect Information on CSA trainings	FU; Knowledge Group.
4	Collect Information on Finance trainings	FU; Investment Group.
5	Collect Information on Soft Skills trainings	FU; Enabling Group.
6	App Development	IT Support
7	App Implementation – Phase 1	FU; Regional Alliances
8	App Implementation –	Regional Alliances

6. Costs

IT has been contact regarding expenses, feasibility and timescale.

7. Risks

	LOW	MEDIUM	HIGH	Mitigating Actions

|				
Lack of engagement of regional alliances	X			An overarching group chat will be created within the discussion portal section of the app with the FU and the Regional Alliances. Within this group chat the FU can directly send reminders to the Regional Alliance Focal Points to engage with their national representatives.
Language barrier	X			• In the knowledge portal we will work for specific regions with predominantly pictures to explain CSA good practices. Signposting to training opportunities will be done in simple language and by providing the hyperlinks. • In the discussion portal feature we will encourage national representatives to speak their national languages within the group chats to overcome the language barrier directly.
Limited broadband for rural farmers		X		This is a significant issues and we will work closely together with software engineers to see how we can develop the app in such a way that it can deliver the best services possible, for the lowest amount of mobile data.

8. Partners

- Farmers
- Farmers' Organisations
- NGO's
- Policy makers
- Action Groups
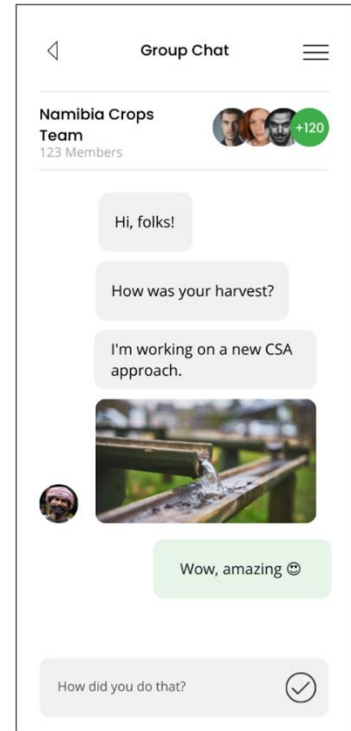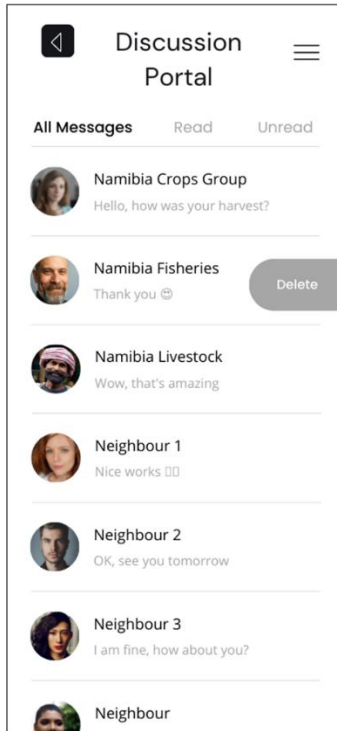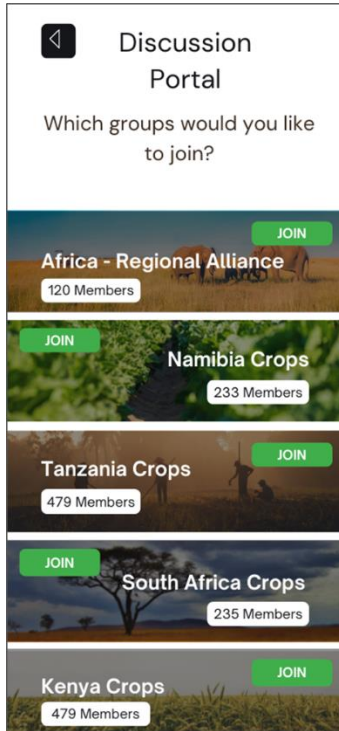- Regional Alliances
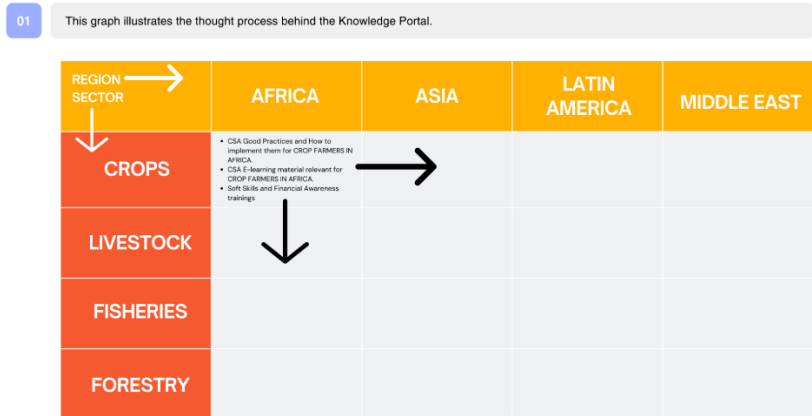- Sponsors & Donors
- Other potential partners

Annex 1.
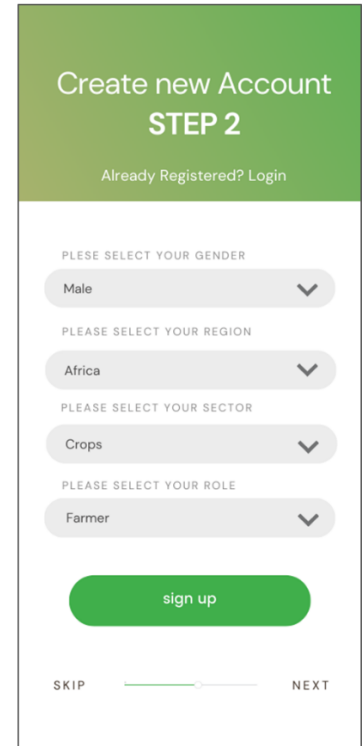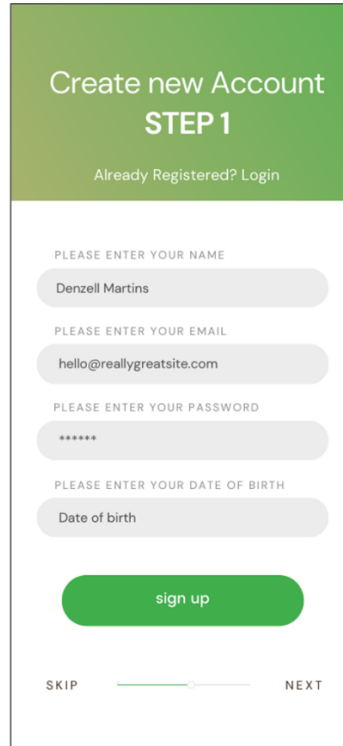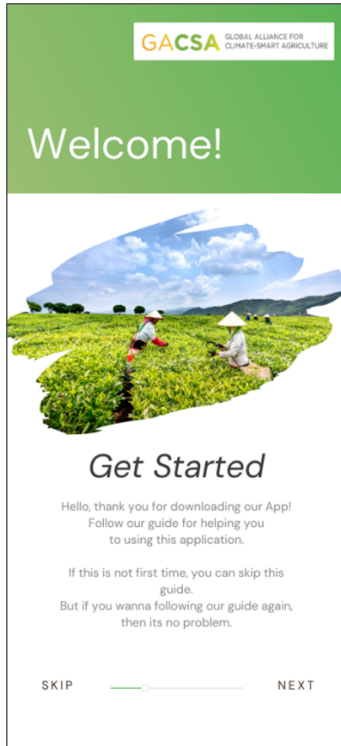
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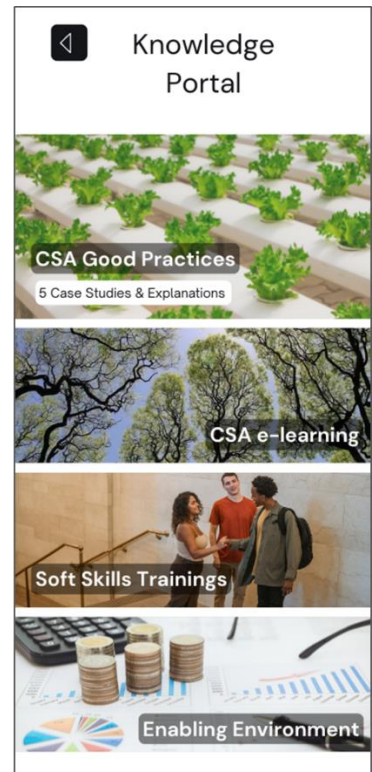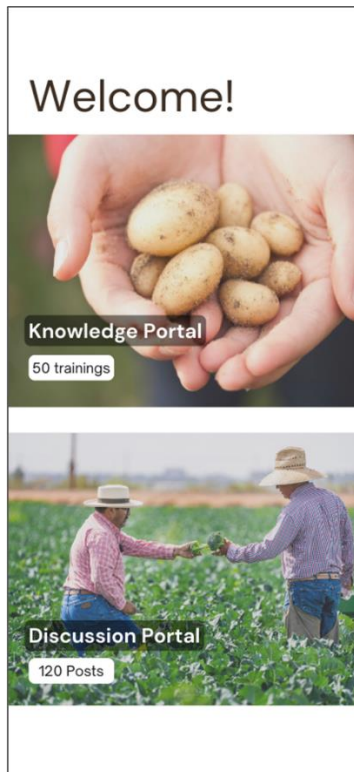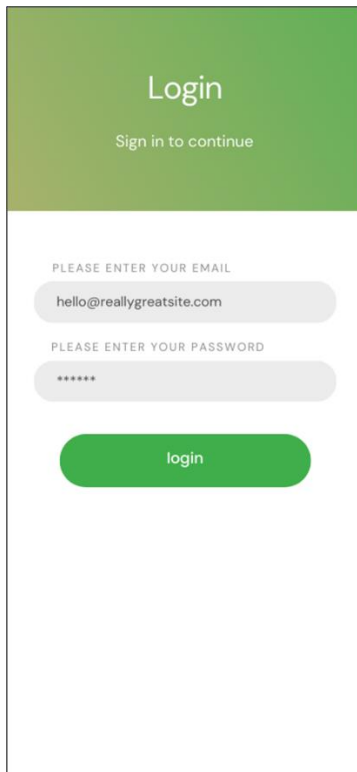
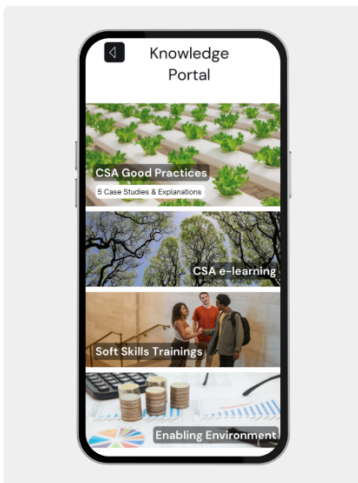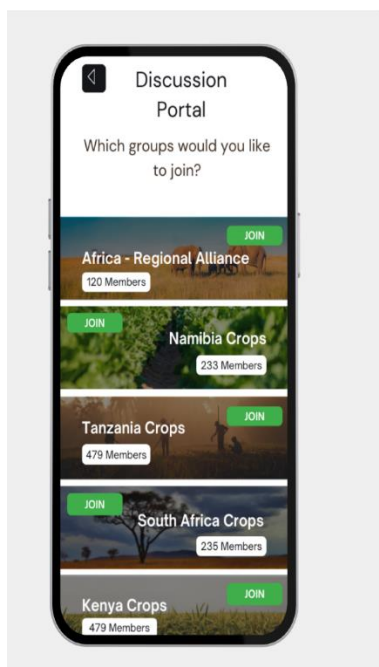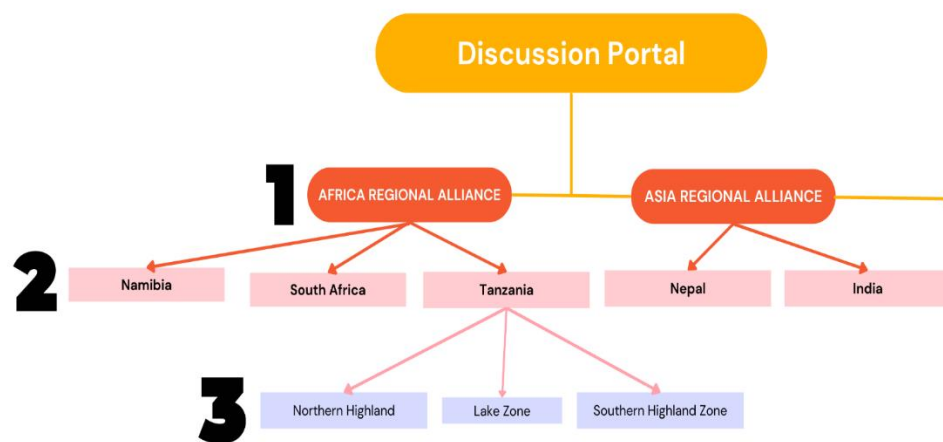## Annex 3.

Annex 4.

Annex 5. Example of how the app would work

Discussion Portal

01 This graph illustrates the thought process and implementation of these discussion fora.

Discussion Portal

1 AFRICA REGIONAL ALLIANCE   ASIA REGIONAL ALLIANCE

2 Namibia | South Africa | Tanzania | Nepal | India

3 Northern Highland | Lake Zone | Southern Highland Zone

Overview

Let's explain the different levels!

Discussion Portal — **LEVEL 0**: This component symbolizes the discussion portal within the app itself.

REGIONS — **LEVEL 1**: These are the regional group chats. They will consist of members of GACSA's regional alliances (who will act as facilitators) and national representatives.

NATIONS — **LEVEL 2**: These are the national group chats. They will be facilitated by national representatives, which will have been appointed in the regional group chats.

LOCAL — **LEVEL 3**: These are the local group chats. They will be facilitated by local representatives, which will have been appointed in the national group chats.