EUROPEAN COMMISSION
EUROPEAN CLIMATE, INFRASTRUCTURE AND ENVIRONMENT EXECUTIVE AGENCY

CINEA.C – Green research and innovation
C.1 – Horizon Europe Climate

GENERAL PROJECT REVIEW CONSOLIDATED REPORT

Grant agreement (GA) number:	869575
Project[1] Acronym:	FOCUS-Africa
Project title:	Full-value chain Optimised Climate User-centric Services for Southern Africa: FOCUS-Africa
Type of action:	RIA
Start date of the project:	01/09/2020
Duration of the project:	48
Name of primary coordinator contact and organisation:	Maxx Dilley (WMO)
Period covered by the report:	from 01/09/2020 to 28/02/2022
Periodic report/Reporting period number:	1
Date of first submission of the periodic report (if applicable):	06/05/2022
Amendments (latest AMD concerning description of the action)[2]	18/06/2021 (AMD-869575-2)
Date of meeting with consortium (if applicable):	Not applicable
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[1] 'Project' means the same thing as 'action'.
[2] Only amendments to the description of the action (DoA; AT21) are relevant for general project reviews since they always have to be carried out against the latest version of the DoA

1. Overall assessment

1. Overall assessment
Project has achieved most of its objectives and milestones for the period with relatively minor deviations.
2. Significant results linked to dissemination, exploitation and impact potential
Project will likely provide results with significant immediate or potential impact in the next reporting period (even if not all objectives mentioned in the Annex 1 to the GA were achieved). The project is likely to provide results with significant immediate or potential impact in the next reporting period (even if not all objectives mentioned in the Annex 1 GA were achieved). From the report and the presentations the following results stood out for us: The Covid-19 pandemic reduced the quality of networking and genuine interactions between participants during events and workshops, which for most part of the reporting period had to be held online. Nonetheless, the online workshops for the project have proven to help engage with stakeholders remotely, conduct collaborative activities, and gather people across countries that otherwise may not have attended a physical workshop. The project had planned for between 25-30 participants per workshop, which has been vastly exceeded due to the online format. Moreover, the events achieved a high level of interaction for online events. Task 1.5: RRI engagement, has important implications and raises the impact potential for the work done under FOCUS-Africa (from now on: FA). It stands to have lasting impacts on the researchers' as well as service providers and end-users' approaches to climate service co-development throughout their careers. It also is great accountability tool for the EU (funding bodies) and its stakeholders. WP2 – concept of "rapid moisture deficit era" will provide new insight & interventions The majority of research on soil moisture in drought-prone areas I've seen, focuses on quantitative assessments, using similar indicators as FOCUS-Africa (e.g. SPEI), however, in WP2 a more long-term comparison (back to beginning of 20th century (!)) allows for an important qualitative comparison with the "gradual moisture deficit era" back then. New insights from this qualitative comparison could be on the effects on the water-food-energy nexus and how modern interventions can alleviate impacts of rapid changes in moisture deficit. Correlation against identified climatic drivers will offer additional insights and prediction skills WP3 / WP4 – seasonal models intercomparisons / best prediction strategy (via BrierSS) In seasonal forecasts, users are often left with a bewildering number of available model results and methods developed in WP3 / WP4 offer a rational strategy to select the most suitable / best predictions, through thorough model intercomparisons (e.g. using the freely available Copernicus C3S seasonal forecasts). The C3S data, available via the Copernicus Climate Data Store (CDS) will eventually allow users (e.g. experts at NHMCs, climate service consultants) to process their own requirements via a cloud-based approach in the CDS toolbox, which, while sophisticated technically, is lightweight on data transfer demands. The methodology and approach of WP6 is a true game changer for FA staff and stakeholders and has the potential to substantially elevate the impact of the project. The results of WP6 will also provide a reference for how CS development can be done in other parts of Africa and the world, assuring sustainability, credibility, and accountancy all the way through. The IAT works as active participant observers in the project and seeks to discuss insights from socio-economic research with case study leaders as they develop their tools, rather than merely passively reporting the impact of the project from a position of external "neutrality". The approach involves engaging closely with key stakeholders to qualitatively understand the way they engage with services developed through the project to change their decisions, behaviours, and outcomes achieved. WP7 – stronger links to SADC CSC and SARCOF, capacity building events at the SARCOF WP7 aims to identify capacity building needs (according to WMO CS capacity framework) and deliver capacity building sessions on seasonal forecasting. The regularly occurring and well-attended SARCOF meetings are ideal occasions for these capacity building sessions as all relevant stakeholders and users are gathered together – this not only enhances efficiency but will also help users from different countries of the region / different organisation to build stronger networks and exchange best practices and success stories on how best to use seasonal forecast (and later on, decadal predictions, too).
3. General comments

The project has produced some first scientific outputs, but most of these will be consolidated in the next phases. The main innovative outputs are the development of the socio-economic impact assessment, and the thorough and very systematic approach to co-developing climate services for specific industries and contexts via the case studies, truly showing how the different actors along the climate service chain can work together and produce tangible results within the lifetime of a single project. The case study approach will facilitate transfer of knowledge along the chain. The results produced so far - scientific, impact and capacity needs assessments, stakeholder workshops and field visits - are of high quality. The deliverables were except for one, all submitted, and all milestones were achieved. They are all acceptable. The project represents good value for money.

Results

- the scientific work under the project envisions to apply and develop new methods for producing seasonal and decadal forecasts, identify and use the best fit climate projections for the region, and identify and test improved multi-modal downscaling for any of these time scales (scientific achievements). The methods/work under the project is addressing an existing gap in applied research for the region and will yield immediate results and benefits to the climate service providers and the end-users involved. Access to long-range weather/climate forecasts (seasonal) and various types of climate predictions / projections (decadal and more long-term) are crucial for the wellbeing of nations which are in vulnerable geographical regions. Yet for most southern African countries (SADC) the IT infrastructure and know-how required to produce such model outputs are currently out of reach of most countries (except perhaps currently South Africa). The main achievement of this project will be to demonstrate how users and stakeholders have free access to sophisticated data sets and processing tools, e.g. developed within the Copernicus C3S programme. Apart from all the data being freely available, cloud-based tools (e.g. within CDS) & methods developed in FOCUS-Africa, will enable users to benefit from climate services developed for water, food, energy and infrastructure sectors. The impact on the above mentioned sectors (potential to cover more), and on societies of the SADC countries will be significant, e.g. helping to strengthen food-security and better management of highly variable resources such as water and energy. Seasonal forecasts and decadal climate predictions will allow decision makers to better plan ahead and to become more resilient to challenges of regional & local climate variability and climate change.
- The consortium's work on co-development is set to set new standards in the region and elsewhere
- The results provided so far are consistently of high quality
- The project has been advertising, communicating, and distributing project activities and results. FA also systematically tracks achievements in this activity area. Dissemination of results, through a well-designed project web site, newsletters & social media activities seems to be able to reach the high-end experts and stakeholders, however, a translation of key results (summaries), fliers, posters & social media messages into the three other official languages of SADC (French, Portuguese, Swahili) would present an easy win in reaching a far greater number of users, stakeholders, wider society, at probably little extra cost.

Progress of the activities

- Intended research, innovation in co-development practices, transfer of knowledge between partners, and training seem all to be going according to work plan
- Even though some of the activities started with a delay, most of them are by now back on track and it looks as if the project will be able to achieve all its objectives within the lifetime of the project. The deviations are explained in the periodic report and acceptable. The corrective actions proposed are timely and appropriate and stand to be efficient and effective.
- The project has a general underspending. Explanations provided, and corrective action proposed are satisfactory. Considering almost all deliverables were submitted, and are of high quality, the project has been managed efficiently and represents good value for money.

4. Recommendations concerning the period covered by the report

The resources used, and the deliverables submitted are accepted.

In case future workshops are required to be held remotely again (e.g. because of resurgence of COVID-19 pandemic), take on board all the lessons learned from first virtual workshops, perhaps see if radio could be used for stakeholders on poor internet or perhaps some local centres where they could attend remotely in small groups / individuals (e.g. civic centres, schools, libraries etc.).

Some of the reports require editing, e.g. D3.1 (D14), where summary is incomprehensible & incomplete (for details see section 5 below), also, and this is more important for published items (whether web site, social media or fliers), We suggest to get someone with a good eye for grammar & typos to carefully check over the work (this appears to have been done only half-heartedly in some of the reports).

In terms of communication and visibility: we already mentioned to carry out dissemination and communication activities in multiple languages (at least for SADC official languages: English (done), French, Portuguese & Swahili). It would also be good if some of the project partners made FA more visible or more easily findable on their own websites.

5. Recommendations concerning future work, if applicable

- It will be crucial for FA work to engage more profoundly with national stakeholders and local communities, and to take potential new COVID waves and their impacts into account in planning these. FA should further identify risk mitigation strategies in case new lockdowns come about and face-to-face meetings will be prevented again. This seems particularly important for the second half of 2022 (autumn), where much of the catching up activities count of these face-to-face interactions. Remote engagement of stakeholders through online methods, has been only partly effective and advancing the case studies requires in-person interaction, especially for engagement end-user such as farmers, and in advancing the scientific and technical work jointly with national partners/stakeholders (e.g. NMHS).

- Identifying topics for the policy brief that highlights specific FA achievements, and tracking whether the policy brief reaches and awakes the interest or engagement of policy makers

- WP1 (D2 etc.): we recommend that at least high-level content (e.g. summaries, and social media engagement) is translated into the other three official SADC languages (French, Portuguese and Swahili), to maximise engagement with stakeholders, such as small-hold farmers. We also suggest interaction with GMES-Africa and improved data extraction / interaction with C3S/CDS. Some training may be necessary, like the one that C3S had across Europe (ULS).

- As the project has so many ins and outs and cross cutting across CSs and WPs, it would be helpful if the project can present some of the progress information in a matrix format with e.g. WP tasks as rows and CS as columns (de facto a table version of Figure 3 in the DoA). So far, WP 2 and WP7 seems a bit disconnected from the rest of the project. It would be good to show exactly how work under these two work packages comes to expression in the CS. In general, the project works along two axes: a regional one and a case study one. It would be good to make an overview of what activities contribute to what axe.

- WP3 / WP4: Explore possibility to run the high-resolution convection-permitting regional climate model (e.g. of Met Office) to be run multiple times and perhaps on a more focused SADC domain (less computationally expensive) and to gain more insight from such an ensemble seasonal forecast (?) / climate prediction (decadal) and climate projection

- WP4: While the “best strategy” assessment is a brilliant idea, the resulting map over Southern Africa may be too complicated to interpret by decision makers, and is currently too much attached to the model-domain, i.e. using rectangular / square grid boxes over the SADC region, rather than using administrative boundaries or catchment areas. We also suggest rather than using “best” as the ultimate qualifier, using a “good” / “very good” qualifier for the model to choose, could result in a more homogeneous map (i.e. not so much variety of models one needs to consult if considering decisions on country / district level).

- WP7 / WP1 etc.: We was glad to learn that the programme management staff is already contemplating to take part in CoP27 in Egypt and perhaps also join with the two other African-focussed EU-project to present at other conferences; We would recommend, towards the end of the project for these 3 projects, perhaps with the help of others (projects & institutions, like SADC CSC – URL http://csc.sadc.int/en/) & additional financial support from the EC, to run an African equivalent of “ECCA”, i.e. “ACCA” = African Climate Change Adaptation conference and perhaps make that an annual or biannual event.

- It would be nice if the project can a bit more attention to the gender balance for scientific staff at the Met Office, UCT, CSIR, ACMAD and UCT, and make an effort to involve female staff.

- Re-tuning of objectives to optimise impact(s) or to keep up with state of the art Through the current food shortage, exacerbated by Russia’s invasion of Ukraine, the issue of food security has become ever-more important in countries of the whole region, and indeed over all of Africa. Recommend revisiting the four relevant Case Studies in this new light. For example, it may be worth re-evaluating if certain wheat varieties could be grown in once-thought unsuitable areas, providing the seasonal forecast indicates such a possibility (with hedging as a resilience strategy).

- Better use of resources We think resources have been used well and if anything prudently – suggest to use some of the surplus from saving on travel (virtual events) in enhancing outreach strategy (this could take the form of providing specialist telecommunication kits / satellite phones / renting of air-time on radio and/or TV station) for interaction with hard-to-reach communities & stakeholders.

- As already mentioned above, if further virtual workshops are necessary (e.g. resurgence of COVID-19 pandemic), ensure that stakeholders with poor internet connectivity / knowledge are more effectively linked in, perhaps through

radio and other more traditional media. Are there traditional forms of communication in rural communities (e.g. similar to the “Gombhira” in Bangladesh – see e.g. URL https://en.wikipedia.org/wiki/Gombhira) which could be used to more effectively communicate to a wider audience, e.g. through a play which shows how a farmer contemplates seasonal forecasting advice (ultimately coming via FOCUS-Africa) and perhaps also with some hedging (i.e. planting for both possible seasonal scenario outcomes), manages to harvest a better yield than in previous years, and hence improving the livelihood of his family and (if surplus) building up some food-security through storing appropriate crops.

2. Objectives and workplan

1. Is the progress reported in line with objectives and work plan as specified in the DoA? If there are significant deviations, please comment.	Yes

Almost all objectives of the project for the period have been achieved. The project saw three major challenges during the first reporting period: 1) the COVID19 pandemic and related travel restrictions, 2) failure of three institutions to become official members of the consortium, and 3) the withdrawal of the JRC from the project. These challenges caused a delay in the start of some activities, a change of some activities, and delayed delivery of some deliverables, but the project has managed to catch up for most of them by M18.

Many of the activities and deliverables require close integration and collaboration between the work packages and partners. This project has many partners, and the implementation has a true matrix design. It is clear from the various deliverables and from the first periodic report that the different partners have indeed closely collaborated, especially around/inside the case studies (CS). Linkages and input/output from and to other work packages are indicated in the report, but We would like to note that the (sometimes repetitive) reporting makes it in places challenging for the reviewer to easily assess the progress or delay for each WP (or CS for that matter). As the project has so many ins and outs and cross cutting across CSs and WPs, it would have been helpful to present some of the information on progress in a matrix format with e.g. WP tasks as rows and CS as columns (de facto a table form of figure 3 in the DoA).

Deliverables:

WP1: The project website (D1.1), a Communication and Dissemination Plan (Task 1.3 and D2.2), the Mid-term report on the first series of events (D1.3), and the Report of the introductory session on responsible research and innovation (Task 1.5 and D1.8) were all delivered on time or with negligible delay. Under Task 1.1 two stakeholder workshops were foreseen for the reporting period, and two have indeed been held (one in South Africa and one in Tanzania), though remotely due to COVID conditions. This caused some challenges in fully achieving the workshops objectives (conducting or progressing on: 1) Situational analysis, 2) Exploration of specific climate data and service requirements; 3) Impact evaluation) as interactions with end users or beneficiaries (e.g. smallholder farmers) of the climate services were not possible. The consortium is mitigating this by conducting field missions to each country/case study. The project advisory board was established (Task 1.2). During the reporting period, the project has undertaken several communication and dissemination actions (Task 1.4). The project could consider better engagement for virtual workshops & hard to reach stakeholders (expand use of relevant media /traditional media); providing content in other official SADC languages.

WP2: The Report describing setting current risks and vulnerabilities and end-user challenges for each case study (Task 2.1 and D2.1) was delayed with three months. It seems it relied a bit more on literature review than initially foreseen, due to COVID conditions. The delay reported in the report (p31, indicated to be 2 months), does not match the table of actual submission dates provided by the EC (where the delay is 3 months). The justification provided in the periodical report is understandable but was foreseeable and could have been anticipated better. We recommend exploring making more of the qualitative “moisture deficit era” analysis for other SADC regions available.

WP3: The report on the selection and analysis of high-resolution projections for the region (task 3.1 and D3.1) was slightly delayed (1month). The delivery of the Report on the analysis of the predictability of seasonal and decadal forecasts for the region and sectors of interest (Task 3.2 and D3.2) is indicated to have a delay of 1 month, and therefore was not submitted in time for the first periodic report. The justification provided is understandable but was foreseeable and could have been anticipated better. Work has started on Task 3.3 (deliverable dues in M24). With respect to D3.3, we recommend that it is supplied as soon as possible as this is a crucial piece of work affecting other activities. Also provide some easy-to understand flyer on the results and how to interpret uncertainty in seasonal forecasts etc.

WP4: No deliverables were due in the reporting period, but the consortium reports progress on various subtasks under Tasks 4.1, and 4.2, and the deliverable D4.1 is set to be completed by M24. The consortium reports that work under Tasks 4.3, 4.4 and 4.5 has started. Our reflections: while the “best strategy” assessment is a brilliant idea, the resulting map over Southern Africa may be too complicated to interpret by decision makers, and is currently too much attached to the model-domain, i.e. using rectangular / square grid boxes over the SADC region, rather than using administrative boundaries or catchment areas. We also suggest rather than using “best” as the ultimate qualifier, using a “good” / “very good” qualifier for the model to choose, could result in a more homogeneous map (i.e. not so much variety of models one needs to consult if considering decisions on country / district level).

WP5: No deliverables due and so far, no tasks have started, but this WP seemed on track and in line with objectives and work plan as specified in the DoA.

WP6: The Methodology to assess socio-economic impacts of climate services (Task 6.1 and D6.1) was submitted on time. The consortium reports progress on subtask 6.2.1, but also reports that this subtask has suffered from COVID related challenges (hampering stakeholder engagement, mapping and interviewing). As a mitigation strategy, the consortium is now fast-tracking and prioritizing field trips to all case-study areas/countries to collect the data. The consortium had foreseen two round of stakeholder engagement in the DoA but is reconsidering this now. The consortium also foresees that the delivery of D6.2 will be (slightly) delayed. We recommend the project supplies this deliverable as soon as possible as this is an important source of information from "grass-root levels" and as such the delay is affecting other activities.

WP7: The Capacity development needs and plan report (Task 7.1 and D7.1) was submitted slightly delayed (1month). Development and testing the training material (Task 7.2) has started. this WP seemed on track and in line with objectives and work plan as specified in the DoA.

WP8: D8.1 Project quality Plan (resulting from Task 8.2), D8.2 Detailed work plan (resulting from Task 8.1), and D8.3 Data Management Plan (resulting from Task 8.5) were all submitted on time. Two amendments to the grant agreement were handled by the coordinator and the PMO (Task 8.4). Various meetings were held with members of the consortium during the reporting period (Task 8.3).

WP9: H -Requirement No1 on ethics was submitted, delayed with 9 months.

Milestones:

Most of the milestones for FA are shared between multiple WPs.

The project's Kick-off meeting was held virtually on 16 and 17 September 2020 (M17), as well as the first and second stakeholder workshops - virtually, in South Africa and Tanzania respectively (M1 and 2).

The input variables to case studies are known (M7), and two users' requirements and challenges were identified (M8) during the first two stakeholder workshops.
M18: The project intranet was established

2. Are the objectives of the project still scientifically and /or technologically relevant?	Yes

The project continues to be very relevant, both scientifically and as a proof of concept for co-development of relevant, credible, effective and sustainable climate services in Africa and elsewhere. In particular, cutting edge model output (CMIP6, C3S seasonal) is used from world-leading production centres.

By bringing different actors along the full climate services chain together in eight case studies, and by aiming to have operational services for end-users for most of these cases by the end of the project, FA advances the way in which climate information is selected, processed, and used for real-world decision making for disaster reduction and adaptation at both shorter and longer term. The explicit focus on societal relevance/socio-economic benefits of the climate services to be co-developed, from the very beginning of each case study, and consistently throughout, is novel. More in general, the project monitors almost every task they undertake, which will yield a rich insight in best practices for co-developed climate services in Africa and elsewhere. The approach and methodology hence continue to be relevant.
The scientific work is oriented by the practical need of users in different socio-economic sectors. Tailoring and applying climate projection analysis and quality assessment, seasonal and decal forecasts predictability and quality assessment, will yield new insights into what further advances in climate science are needed.

3. Are the critical implementation risks and mitigation actions described in the DoA still relevant?	Yes

The risk identified in the DoA are still relevant, as are the mitigation actions.

Three of the main risks experienced by the project during the reporting period, were not identified in the DoA risk matrix (COVID, failure of crucial institutions to become consortium members, and the withdrawal of a consortium member). The project nevertheless seems to have navigated/mitigated these risks well by M18/20. The COVID pandemic made for the manifestation of risks 10, 12, and further down the service chain potentially also 8. The consortium mitigated the impacts by moving stakeholder interactions online but recognises in its report that this was not sufficient. The consortium is in the process of conducting targeted field missions (that were originally not planned as such in the DoA) as a further mitigation measure. Two rounds of stakeholder engagement were foreseen in the DoA. It seems that even with the proposed mitigation actions, only one round of stakeholder engagement will be possible, and it would be good if the consortium identifies how they will further mitigate the impact of this.

Some deliverables were late, and this seems to be an expression of risk 16.

The project could consider adding as a risk the increased food-insecurity issues (Russia's invasion of Ukraine), could result in civic unrest because of food shortages.	
4. Have the pilots/case studies started to showcase innovative results as described in the DoA?	Yes
The case studies differ significantly in terms of input data and initial models available, and in terms of ease of stakeholder/ end-user interaction. From the presentation at the review meeting, it clear that all case studies show progress. For many of the the initial stages of the impact assessment remain to be done, and this is planned for the next few weeks and months. The case studies can be seen as a live lab, and the consortium is adopting a flexible and solution oriented approach to each of them, willing to change sector, end-user or country if need be, to advance.	
5. Have the ethics deliverables due for the current period been adequately addressed and approved?	Yes
The periodic report indicates that a storage plan for personal data and a procedure for the use of personal data within the framework of task 1.1, 2.1, 5.3, 6.2 and 6.3 and stakeholders' workshops have been put in place.	
6. Have the comments and recommendations from previous project reviews been taken into account?	Not applicable

3. Impact

1. Does the work carried out contribute to the expected impacts detailed in the DoA?	Yes

Yes, especially to
• targeted sessions for NMS experts at workshops on seasonal forecasting;
• making model output & derived indicators & climate services useful to SADC;
• socio-economic value to multiple sectors very relevant to well-being of people, organisations and companies in SADC region.

As per expected impact stated in the DoA:

- Better policy making for climate adaptation in project and other countries including Europe
FA consortium members have presented the FA work at various forums where policy makers were present (the AU-EU high-level policy dialogue on Science Technology and Innovation, the 2021 Earth Day campaign, the 2021 SARCOF and the 2022 ACCOF), and one policy brief on the importance of Indigenous and Traditional Knowledge has been issued.

- Increased scientific capacity building in the region and strengthened support for international scientific assessments
WP 7 specifically has identified gaps in current training material for the region and has developed an action plan for developing training materials and conducting capacity development programmes in the SADC region. Scientific capacity are also to be built within each case study but heightened in-person stakeholder interactions are needed to ensure this also manifests itself, as remote engagement poses challenges for exactly the scientific capacity building of national partners and stakeholders.

- Stronger adaptive capacity and climate resilience in project countries
Through the very applied full value chain case study approach, FA targetedly aims to build capacity for adaptation and resilience for specific sectoral case studies. The activities conducted in the reporting period illustrate that this approach is already working and that the project hence stands to indeed, in a very practical way, achieve this. In monitoring their activities and impact, the project will also be able to provide rich insights and recommendations of what (approaches, methods, models) truly works to respond to adaptation needs in Africa and elsewhere. This impact is closely related to the impact Increase uptake and sustainability of the developed climate services

- Better informed and connected end-user communities
The workshops organised in the reporting period have brought different communities along the climate services value chain together.

- Improved women's access to climate services
The project has been gender sensitive and inclusive in implementing data collection tools (e.g. interviews) and in analysis of this data. The participation of women in various activities is being tracked (e.g. in case study meetings). It will be interesting to see how women's specific needs are covered by WP7 and by WP5 in the next reporting periods.

2. Does the work carried out follow the plan detailed in the DoA to enhance innovation capacity, create new markets opportunities, strengthen competitiveness and growth of companies, address issues related to climate change or the environment, address industrial and/or societal needs at regional level or bring other important benefits for society? Give information on the relevant innovation activities carried out (prototypes, testing activities, standards, clinical trials) and/or new product, service, reference materials, process or method (to be) launched to the market, if any.	Yes

Yes, as outlined above. Especially FOCUS-Africa addresses issues relating to climate change, climate resilience & the environment, it addresses industrial and societal needs at national, regional and local level and is very likely to bring important benefits for society, i.e. food-security, more stable and sustainable water & energy supplies, more resilient infrastructure.

FOCUS-Africa engages actors along the full value chain of climate services and intends to produce functioning prototype services at high technology readiness level by the end of project. Through a dedicated work package (WP6), FA ensures that socio-economic benefit checks are applied at every stage of conception, design, development, and testing of the services. Several private companies are involved in the case studies, and the work under FA will enhance their operations, and their long term climate proof planning hence strengthening the companies' competitiveness. The thorough focus on co-development practices in combination with the impact evaluation at every step along the chain, is set to firmly establish new practices and processes for any future development of climate services at national level, in SADC and elsewhere, and bring related societal benefits.

3. Does the work carried out contribute towards European policy objectives and strategies and have an impact on policy making?	Partially
This project is mainly of direct benefit & value to SADC region of Africa, and only touches on EU policy objectives that recommend strengthening of climate resilience in Africa, addressing food-security and capacity building in African countries and similar policy & strategies. The work under FA supports the EU strategy on adaptation to climate by bridging the knowledges gap (action 4) and ensuring more resilient infrastructure (action 7)	
4. Does (or will) the work carried out have an impact on SMEs?	Yes
Yes, especially from case studies and from development of appropriate & easy-to-use (and not too data-intensive) climate services of the food, eater and energy nexus, particularly for small-hold farmers. Three SMEs are directly involved in FA. The work under FA will lay the foundation and create market opportunities for the development of new commercial climate services and products in the region by further SMEs. The TRL of the services coming out of the CS will vary between the case studies, and hence ease of exploitation by SMEs will accordingly vary.	
5. Have the beneficiaries reached gender balance at all levels of personnel assigned to the action? If not, have the reasons been explained in the periodic report?	Partially
We did not really discuss this, nor was it addressed much in the deliverables Overall, 35% of the scientific staff under the project is female, and 56% of non-scientific staff. The Met Office, CSIR and UCT underperform in terms of overall female staff. The Met Office, UCT, CSIR, ACMAD and UCT severely underperform for female scientific staff. The consortium does not specifically identify the work package or case study leaders in the DoA or in the periodic report, hence it is difficult to assess the balance here. If I am not mistaken only 2 out of 7 leaders are women. The project does indicate and reports on (systematically) taking gender into account in the content work. The RRI training and implementation plan have the potential to contribute considerably to the inclusion of gender issues in the content work. However, we recommend that more effort should be given to achieve gender balance, especially as stakeholders in agriculture will contain a significant number of women. However, in many projects in developing countries with societies with traditional cultural values, involvement of women is often a challenge We suggest to have female experts (perhaps with special gender-awareness training) at the next in country-visits that will take the participating women aside, as they are more likely to open up then. Also think of way to deliberately invite more female users & stakeholders (e.g. through NGOs & other networks).	

4. Implementation

1. Has the project been efficiently and effectively managed?	Yes
Judging by the periodic report and from the deliverables, the project is achieving most of its envisaged objectives, and the methods, activities and risk mitigation measures have resulted in effective implementation, especially under COVID conditions, and considering one project partner left. There is a slight underspending in terms of PM across WP and partners. Considering we are at M18, and assuming that the consortium can work more efficiently now that the second amendment is in place, it seems that the underspending can be compensated for in the next project period.	
2. Is the management of the project in line with the obligations of beneficiaries (including ethics and security requirements, risk and innovation management if applicable)?	Yes
The project is well managed by the partners and persons identified in the DoA to do so. Ethics and security requirements are respected.	
3. Is the contribution of each beneficiary in line with the work committed in the DoA? (applicable only to multibeneficiary projects)	Partially
One of the project partners left, and others took over the remainder of their duties. The partners according to the latest amendment are contributing in line with the work committed in the DoA LGI seemed to stand out, slightly above the rest.	
4. Have the beneficiaries disseminated project results (foreground) in scientific publications as planned in the DoA (including the deposition of publications in open access repositories)? Do they include a reference to EU funding?	No
The project has not produced any scientific publications yet.	
5. Have the beneficiaries disseminated and communicated project activities and results by other means than scientific publications (social media, press-release, the project web site, video/film, etc) as planned in the DoA? Do they include a reference to EU funding?	Yes
The project has set up a well-functioning and attractive website, produced infographics and videos for the case studies, and have share information at various conferences, workshops and webinars during the reporting period. The project indicated that it would participate in many regional COFs but seems to have limited this to ACCOF and SARCOF for the first reporting period. It is however not straightforward to find mentioning of the project or the project itself on all partners' websites.	
6. Has the plan for the exploitation and dissemination of the results (if required) been updated and implemented as described in the DoA, in particular as regards intellectual property rights? Is it appropriate?	Not applicable
A first plan was developed. The second version is due M28.	
7. Has the data management plan (DMP) (if required) been updated and implemented? Is it appropriate?	Yes
A data management plan has been submitted and currently no update required	
8. Have the proposed institutional changes been appropriately promoted?	Not applicable

5. Resources

1. Were the resources used as described in the DoA and were they necessary to achieve its objectives? If there are deviations from planned budget, have they been satisfactorily explained? Have they been used in a manner consistent with the principle of sound financial management (in particular economy, efficiency and effectiveness)?	Partially

The periodic report covers the first 18 months of the project. The total duration of the project is set at 48 months. By month 18, the project was hence 37,5% through its implementation period.

Some resources were not spent due to reduced travel (because virtual workshops were necessary due to COVID-19 pandemic travel restrictions / security).

Comparing the UOR summary submitted to the person month table in the latest amendment (AMD-869575-9), the following can be noted:

- WP1 and WP4 are almost exactly at 37,5% of their PM

- WP2 (50%) and WP4 (65%) have spent considerably higher PM; but when looking at when their last deliverable is due (respectively M30 and M24), they should by M18 have roughly consumer 60% and 75% of their PM.

- WP6, 7 and 8 have respectively spent 26%, 27% and 22% of their PM.

Per partner:

- WMO has spent 24% of their PM, WMN_MNREM 0%, BSC 30%, MO 49%, WEMC 7%, EDF 42% ACMAD 38%, CSIR 41%LGI 34%, WITS 43%, UCT22%, AMIGO 25%, JRC 100%, PLAN 22%, and IAM 38%.

- For many of these, the deviation from the 37,5% can be explained by their more or lesser involvement in WPs that are either heavy in the first phase of the project (such as WP2 & 3) or rather in the second half of the project (such as WP 5).

- Taking this into consideration, it seems that WMO, WEMC, and UCT are underspending PMs at the moment.

Deviations from the planned budget are captured in the latest amendment. Three institutions (MO, WEMC and CSIR) report smaller efforts in the monthly rate due to more junior staff doing the actual work.

Annex 1

Expert opinion on deliverables

Deliverable number	Deliverable name	Status	Comments
D1.1	Project Website	Request for revision	The project website is attractive and is well organised. Items are cross linked, repeated under different categories, and easy to find. good: dynamic & responsive layout; good: partner resources & publications; Comments: Has the project had a multi-cultural design / analysis? Is content available in languages other than English (at least summary - FR, PT, SW); SW = Swahili Has a usability analysis / consultation with stakeholders been performed or is it planned? In news section (URL https://focusafricaproject.eu/news-blog/) the tiles of rows do not align well.
D1.2	Communication and Dissemination Plan, style guide document	Accepted	The CDP is detailed and appropriate, the KPI are well defined and realistic. good: synergies with other projects; good: spread & frequency of comms (though TV & radio events missing); Minor comments: Could have mentioned GMES4Africa Missing engagement with university students / high school students
D1.3	Mid-term report on the first series of the events	Accepted	Minor comment: Discussions with smallholder farmers were impossible (online) - how can this be overcome? good: online workshops allowed more people to participate; good: frequent, interesting & varied postings on LinkedIn - how many people reached (says 237 followers)? How could that number be enhanced? good: Second stakeholders' virtual engagement workshop had some 200 participants; good: joint targeted visit to Mozambique success; enabling a better understanding of the socioeconomic context, needs and practices of smallholder farmers, local expertise, capacity, and systems to foster the legacy of the project outcomes; good: seems to be good collaboration between DOWN2EARTH, CONFER and FOCUSAFRICA; so far 7 conferences & similar events, looks like a good spread, though could have perhaps had more SADC-based events; good: consortium members designed the virtual workshops to be as interactive as possible, with

Deliverable number	Deliverable name	Status	Comments
			the inclusion of in-session live surveys to gather specific information to feed into the case studies and overall project implementation; good: "broader engagement and advocacy through the project's various social media channels, targeted campaigns, and participation in the conferences and webinars of partners has also been undertaken albeit largely virtually, the awareness on the project has been increased."
D1.8	Report on the introductory session on responsible research and innovation	Accepted	High quality report that beautifully shows how the RRI framework can be applied to every aspect and activity of a project Perhaps re-open for (minor) review: FoTRRIS should have been explained in the acronym list The workshop murals look engaging, though one has to enlarge the PDF significantly before readable - could this be done better, or a note for user to zoom in? Typo in "Wiley" (capital "I") on p36.
D2.1	Report describing setting current risks and vulnerabilities and end-users challenges for each case study	Accepted	The report describes in detail what the challenges are in terms of current and newly developed CS products and science. It also proposes for each case study how the challenges with relation to the new services can be addressed. Do I understand it correctly that WP7 will address the challenges related to existing services? Perhaps re-open for (very minor) review good: explanation & description of SARCOF; good: case study descriptions; good: extensive reference section; In summary: "COVID?19" - change to "COVID-19" In top of table "Land bank", should have been "Land Bank" (capital "B"")
D3.1	Report on the selection and analysis of high-resolution climate projections of the region	Request for revision	Detailed assessment of the model performances for air temperature and precipitation Detailed assessment of the model performances for air temperature and precipitation However, we found that this summary is very difficult to comprehend, either run through a readability checker and fix issues, or, on top of fixing issues like the ones mentioned below, provide an easy-to-understand summary (like some journals do these days). 3rd sentence in summary (p2) is very long (76 words) hard to understand and may contain an error: "The development of improved climate information and forecasts of decision-relevant parameters is essential to address these challenges FOCUS-Africa s climate services ..." - what is the "s", typo ?; further down in summary in, a second such "s": "To achieve this, WP3 explores the performances

Deliverable number	Deliverable name	Status	Comments
			of the latest climate projections (Task 3.1, M12) and predictability at seasonal forecast time scales s (Task 3.2, M18) as well as analyse the extremes ..." - is the "s" for "analyse" (should have one) ?; near the end of summary an "o" is used instead of degree, this is not good style: "However, the high-resolution models exhibit larger values with increase average around 5oC"; The abbreviations ESAF and SEAF are used in summary without being first defined; I don't understand why the typical 3-month season for mid-latitude are being used (DJF, MAM, JJA, SON), when e.g. Tanzania has two major rainfall periods: one is uni-modal (October–April) and the other is bi-modal (October–December and March–May); the ones starting in October do not align with the aforementioned 3-month seasons. The two special high-res model cases, CP4A & CCAM could have been explained more comprehensively, including their driving GCMs (pp 11-12). In section 4.1 in 1st paragraph, missing reference: "... as shown in Error! Reference source not found.. ..."; occurs 2nd time in section 6.7 in 1st paragraph (although Figure 49 is there ???); In section 5.1 quick orientation could be achieved by showing a schematic figure with biases for each of the models (annual & individual seasons; temperature & precip); purely qualitative - in blue/red for temperature and perhaps brown/green for temperature (and white for a central region of less bias than a threshold); similar to table 4 near the end of the document. Section 5.1.4 Zone 4 – Western South Africa (WSAF), insert "monthly" to make clearer: "This is the driest of the four regions, with observed [insert: monthly] precipitation remaining below 50 mm year-round and is represented well by most of the RCMs in the study (Figure 6)." In figure 19 etc variables rnd24, tave, brnd, btas, are not defined they may be common in ERA etc, but should be defined in this document. good: high res models incorporated - "The simulations from CP4A (4.5 km) and CCAM (8 km) exhibit some improvements compared to the lower resolution models especially for the DJF rainfall." good: "The severity of the change is also diverse, for example, GFDL-ESM2G has both increases and decreases in rainfall up to and exceeding 100 mm/month, whereas models such as EC-EARTH and HadGEM2-ES show much smaller changes ..."
D3.2	Report on the analysis of the predictability of seasonal and decadal forecasts for the region and sectors of interest	Not submitted	Summary is not quite to the point (partly copied from another WP report ?) and ends in "..." Exec summary is ok. good: Introduction is very clear and puts the case

Deliverable number	Deliverable name	Status	Comments
			for seasonal/decadal forecasts well; good: chapter 2 acknowledges that there are drawbacks to users of seasonal/decadal forecasts; good: chapter 4 poses important research question: "An open question in southern African climate science is whether the relatively low skill in predicting seasonal rainfall anomalies in winter and the transition seasons can be improved."; good: sub-chapter 5.1 El Niño Teleconnection characterisation is very clear; also 5.2 ITCZ Teleconnection characterisation; and We like 5.3 A show case for Mozambique - Fig 63 quite shocking!; good: Chapter 6 "Conclusion" has good narrative. Could have made reference to the seasonal forecasting system of Copernicus C3S (8 participating centres, plus ensemble), see URL https://climate.copernicus.eu/charts/c3s_seasonal/ - can focus on Africa etc. Like all Copernicus products, this is free of charge to users worldwide. "TNA" (I think it's for "Tropical North Atlantic" basin) has not been defined, used in Fig 1, same for "NAT" and some others, because they are not important? Fig 3/4 (p 15) - top graph (3) goes to 2020, but bottom one (4) only to 2016, especially missing out very strong IOD event of 2019/2020 - can that Fig 4 be amended (even manually)? Not sure if We entirely agree with "AMIP simulations are 'perfect', the representation of inter-annual variability in the simulations may be regarded as an upper boundary for seasonal forecast skill." - can this be further explained? Could the time-series presented in Fig 14 (p 30) for the Orange River Basin be compared with decadal predictions (hindcasts) or is the area too small - it's fine further down for SE Africa, Fig 15)? "Baroclinic perturbations" - could there be an explanation why they are so important and related to mesoscale eddies etc.? It's hinted at in 2nd paragraph of 4.3 (p 32), could be clearer. Baroclinic Amplitude Index (formula), p 33 - should the top of the summation index be 7, rather than 4 (which would just be a single term, not a proper sum)? Formatting at end of PDF p 35 (p 32 on page numbering) "Hayashi spectra of SEAS5 seasonal forecast" needs improving, carries on in bold & centre formatted (orphaned title / line) and on next page starts with capital letter, so not clear if this is still part of "We show the averaged Hayashi spectra across the members of the SEAS5 ensemble in" - the part on PDF p 36 ends on "Nevertheless, we can deduct from" and should probably blend into the

Deliverable number	Deliverable name	Status	Comments
			next line (starting with "Figure 17 that ..." Fig 18 b has a spurious numerical value inside the figure ("4e+03") - why is it there? Contour line? Names of oceans should be capitalised, "equatorial pacific" -> "equatorial Pacific" (p 13). American spelling should be converted to British English consistently - e.g. "behaviour", "centre", "colour", "vapour" & "kilometres"; lots of words with "z" -> "s" Typo: "Englebrecht" - should be "Engelbrecht", in History table (p 2) - this is the author?!? Typo: "Report on the analysisof the predictability ofseasonal and decadalforecasts for the regionand sectors interest" - insert spaces (several occasions, also apostrophes have been corrupted to question marks in several places) Typo: "mb" -> "mbar" Typo: "artifact" -> "artefact" Typo: "Nino" & "Nina" should be spelled with 2nd "n" as "ñ" consistently (multiple occasions).
D6.1	Methodology to assess socio-economic impacts of climate services	Accepted	High quality deliverable that can be used as a reference on how to assess the socio-economic impacts of climate services developed while they are being developed High quality deliverable that can be used as a reference on how to assess the socio-economic impacts of climate services developed while they are being developed Some observations: A good & detailed description of the topic & its findings - the methodology for the impact assessment of climate services in FOCUS Africa consists of 3 phases (evaluation of the socioeconomic situation for each case study context, potential anticipated impact of the climate services (‘ex-ante’), and measured impacts of the climate services (‘ex-post’). The case studies are well selected and map well onto the current issues in the SADC region. good: looked at some other projects (Climandes, WISER, Sustainable CIS), rather than re-invent the wheel; good: nice graphical design, e.g. Fig 5; good: invoking "Theory of Change"; good: Impact stories. "Water is a flux (...) and it is fugitive in nature" - can you explain "fugitive" ? Some text in Fig 4 - Fig 8 too small to read - try to enlarge font. Suggestion for Chapter 4 - change the titles of 4.n CSn to something more descriptive, e.g. "4.1 CS1 - Food Security in South Africa". Settle on either "FOCUS-Africa" or "Focus Africa", probably former - not good style to mix

Deliverable number	Deliverable name	Status	Comments
			both: "Figure 1: Focus Africa impact assessment methodology overview" "Figure 2: FOCUS-Africa Case Studies" Similarly, style of Fig 18 - Fig 41 list uses different upper-/lowercase patterns. Acronyms could list GIZ = Deutsche Gesellschaft für Internationale Zusammenarbeit. Typos in title (p1): "Methodology to assesssocioeconomic impactsof climate services" - insert spaces after "assess" & "impacts" - multiple occasions; Typo: in "Deutsche Gesellschaft für Internationale Züsammenarbeit" (GIZ) -> it is "Zusammenarbeit" (no umlaut here), also in reference section; Typo: "conideration" -> "considerations" (several times); Typo: "targetted" -> "targeted" (several times); Typo: "embbed" -> "embed"; Typo: "evalutation" -> "evaluation" (several times); Typo: ",concider" -> ", consider"; Typo: "kilometers" -> "kilometres"; Typo: "Washintgon" -> "Washington";
D7.1	Capacity Development needs and plan report	Request for revision	Good overview of the challenges and needs in the SADC region, for different organizations and climate service providers. The report includes a plan for addressing the needs. It is however unclear which of these, and to what extent they will be addressed within the scope/lifetime of the FA project. Good overview of the challenges and needs in the SADC region, for different organizations and climate service providers. The report includes a plan for addressing the needs. It is however unclear which of these, and to what extent they will be addressed within the scope/lifetime of the FA project. Observations: good: clear summary; good: high response rate to questionnaire: "A climate services questionnaire on “Checklist for Climate Services Implementation” was also distributed to 16 SADC member states, of which 14 responded"; good: use of SMART framework; good: acknowledgement of inadequate generic tools: "At present, most NMHSs prepare climate data for analysis using MS Excel, which is a cumbersome process."; good: section 5 has good gap analysis and presentation of key challenges and recommendations. Why are SADC countries not involved in the

Deliverable number	Deliverable name	Status	Comments
			follow up Global Monitoring for Environment and Security (GMES) project - is that GMES-Africa? "cloud computing is only possible currently in South Africa" - what about using Copernicus C3S CDS (Climate Data Store) toolbox (some knowledge of Python is required)? Summary (p 2) seems incomplete at the end ("...") While the questionnaire is accessible via WMO (reference 2020a), to make the document more selfcontained it could be reproduced in an appendix to D7.1? Figure 1 is fuzzy, please insert a higher-resolution version. Typos: "Capacity Developmentneeds and plan report" (insert space before "needs"), several occurrences. Several words are spelled the American English way, this should be avoided (e.g. "analyze"). Formatting issue: apostrophes / quotation marks have become question marks. Text formatting of last paragraph on p 14 (in document p 11) - please change font & spacing. - Perhaps this also causes the glitch in the page numbering? Re Figures 2, 3 & 6-13 - please explain the meaning of "Nil" - is it "not answered in questionnaire"? It's not explained in the text. The table in 7. Action Plan has its leftmost column almost empty the whole way through (only 3 entries in section 3) - is this intentional? "Error! Reference source not found" on p 19 (p 5 in document), also p 25 (p 11 in document), for figures. After p 14 (p 11 in document) page counting restarts, which is confusing - p 15 (PDF) is again p 1 in document.
D8.1	Project Quality Plan	Accepted	Observations: good: project organisation graphics & workflow validation process (p 9); This is a well written document and useful to all WP leads etc. In the following a few minor / cosmetic issues: some minor formatting (e.g. case studie leaders list - space & colons), suggestion: • CSn: Name i.e. no space between CSn & colon; last sentence on p 10 is an "orphan", would be better on top of p 11. On graphics "The technical reporting process" (p 11) the rightmost text carries red wriggles under "SyGMa" - should be removed. Also, "SyGMa" is not defined in this chapter;
D8.2	Detailed Work Plan	Accepted	Observations: Good write up & descriptions of tasks, in latter part

Deliverable number	Deliverable name	Status	Comments
			quite a few French-inspired typos. Gantt chart missing, as well as a matrix which would show dependencies etc. Some formatting issues in TOC (and this will also need fixing in text, which should fix TOC): 2.4 Milestones of WP1 (needs to be WP2) 3.5 MILESTONES OF WP1 (needs to be WP3) 6.7 DELIVERABLES ("of WP6" is missing) 8.6 DELIVERABLES ("of WP8" is missing) No Milestones section for WP6 ? Generally, more uniformity should be applied: WPn (no space) and Task n.m (no additional dot at end) In exec summary (p 5) add relevant word/phrase: "There is always at least one responsible [person| member of staff] appointed for an action." Typo: "patners" (partners); Typo: "eigth" - do you mean "eight"? Typo: "banwidth" (add "d"); Typo: "Amendement" (second "e" to be deleted) Typo: "Continous" (several times, add "u" before "ous") Typo: "ressources" (single "s") Typo: "sanitery" ("sanitary") Typo: "Officier" ("officer") good: project calendar (but months in French??) (pp 53/54).
D8.3	Data Management Plan	Request for revision	Overall impression: content is ok and covers relevant areas, however, a number of small issues that should be corrected: Summary does not read well, please rewrite - example (1st&2nd line): "The goal of the project is to: is to develop sustainable tailored climate services ..." (also in exec summary on p6) Summary needs reformatting (apostrophes have become question marks). Looks strange: "author(s)'s" (p 5) Acronym not right (word order wrong, "data" lowercase) "General Protection data Regulation (GDPR) should be "General Data Protection Regulation (GDPR)" Typo "varities" (p 15), should be "varieties" Entry "WITS - CCAM 8km downscaled climate projections" has no entries in columns 3 & 4 ("Foreseen use & re-use" and "Possibility to share the data beyond the consortium" respectively), should be filled out; good: table 3.2.2 "Datasets that could be made openly accessible in FOCUS-Africa"
D9.1	H - Requirement No. 1	Accepted	Could have asked participants of their level of knowledge, e.g. on seasonal, decadal and climate projection timescales etc.

Annex 2

Expert opinion on milestones

Milestone number	Milestone name	Achieved	Comments
MS1	First Stakeholder Workshop	Yes	1st Stakeholder Workshop (Virtual) 9th December 2020 – large number of participants – who could not attend because of their poor access to Internet?
MS2	Second Stakeholder Workshop	Yes	2nd Stakeholder Workshop (Virtual) – FOCUS on Tanzania September 2021 Disadvantage less direct SH interaction and input, advantage: boarder participation of larger audience
MS7	All input variables to case study known	Yes	no comment
MS8	2 users' requirements and challenges identified	Yes	Virtually and with follow up in the field
MS17	Kick Off Meeting	Yes	virtually
MS18	Project intranet established	Yes	As with the nature of an intranet site, it is difficult to get an in-depth view as an outside person; however, from reports & slides provided, we are confident that this has been achieved.