INTERIM NARRATIVE REPORT

1. Description

1.1. Name of beneficiary of grant contract: Caribbean Institute for Meteorology and Hydrology

1.2. Name and title of the Contact person : Mr. Adrian Trotman, Chief Agrometeorologist

1.3. Name of partners in the Action: National Meteorological and Hydrological Services (NMHSs) of Antigua and Barbuda, Barbados, Belize, Dominica, Grenada, Guyana, Jamaica, St. Lucia, St Vincent and the Grenadines and Trinidad and Tobago, CARDI, Caribbean Institute for Meteorology and Hydrology (CIMH) and the World Meteorological Organisation (WMO).

1.4. Title of the Action: Caribbean Agro-Meteorological Initiative

1.5. Contract number: Grant No. FED/2009/217069

1.6. Start date and end date of the reporting period: November 10, 2009 to November 09, 2010

1.7. Target country(ies) or region(s): Caribbean Region

1.8. Final beneficiaries &/or target groups[1] (if different) (including numbers of women and men):

1.9. Country (ies) in which the activities take place (if different from 1.7):

2. Assessment of implementation of Action activities

2.1. Activities and results

Steering Committee Meetings

The First Steering Committee meeting of the Caribbean Agrometeorological Initiative was held on August 9 and 10 2010. On the first day, the meeting was held at the campus of the Caribbean Institute for Meteorology and Hydrology (CIMH) in Barbados. On the second day the committee members met with officers of the Ministry of Agriculture at their Headquarters in Graeme Hall, Christ Church, Barbados.

Please see full report at **Annex 1**.

The second Steering Committee Meeting is scheduled for the first week in December 2010.

Stakeholder Meeting

[1] "Target groups" are the groups/entities who will be directly positively affected by the project at the Project Purpose level, and "final beneficiaries" are those who will benefit from the project in the long term at the level of the society or sector at large.

The first Stakeholders Meeting took place on 11 February 2010, at the offices of the Caribbean Institute for Meteorology and Hydrology and marked the launch of the project. It involved meteorological and agricultural personnel from the ten project countries.
Other invited non-partner institutions included the Caribbean Community Climate Change Centre (CCCCC), the Caribbean Disaster Emergency Management Agency (CDEMA), the Caribbean Meteorological Organization (CMO) Headquarters Unit, the Inter-American Institute for Cooperation in Agriculture (IICA), the United States Department of Agriculture (representing as key note speaker) and the European Commission Delegation in Barbados and the Eastern Caribbean.

Please see full report at **Annex 2**.

Regional Technical Workshops
The first regional workshop entitled 'Rainy Season Predictors and Interpretation and Management Workshop', took place at the offices of the Caribbean Institute for Meteorology and Hydrology from June 15th to 19th 2010.

The purpose of this workshop was to assist the NMHSs of the ten Caribbean countries involved in this Action to develop relevant products applicable to agriculture through the analysis of rainfall (and temperature). CARDI also took part in this training. This training, which involved the proposed statistical approach, was conducted by Dr. Roger Stern of the Statistical Services Centre of the University of Reading, globally recognized for his statistical applications in climatology. Apart from the theoretical training much of the focus was on providing guided hands on activity.

Through CAMI's interest in seasonal rainfall prediction, the project developed synergy with a NOAA/USGS meeting that was hosted by CIMH which focused on re-establishment of Regional Climate Outlook Forum (RCOF). CAMI participants stayed on for this workshop, which ran from 21-23 June, 2010.

The full report is attached at **Annex 3**.

Data Rescue

As at November 30, 2010 the data rescue exercise was completed for six of the ten countries. Staff of the CIMH visited Guyana, Grenada, St. Lucia, St. Vincent and the Grenadines and Antigua and Barbuda to complete the data recovery process. The intention is to continue this activity during year two as the remaining partner countries prepare themselves, while seeking to overcome some challenges to this effort. (See **Relationship with State Authorities**).

Reports on these visits are attached at **Annex 4**.

Training Attachments

Three CIMH staff members visited the University of Reading in the UK, to take part in a training attachment that expanded their statistical analysis skills. The Training furthered the application of the INSTAT and GENSTAT packages introduced at the training workshop held in Barbados.

See **Annex 5** for the full report.

Partners Involvement in the Project

The National Meteorological and Hydrological Services were involved from start-up of the project. Representatives from each service attended the first Steering Committee (which guided the first year of the project) and Stakeholder meetings held in Barbados in February 2010. (3 days 16 persons). The stakeholder meeting was paramount in beginning non-existing dialogue between meteorologists and the agricultural community which will be build upon at other meetings, fora and training workshops.

Representatives from each NMHS again attended the technical workshop on Rainy Season Predictors and Interpretation and Management Workshop held in Barbados from June 15th to 19th, 2010. (4.5 days 15 persons). CIMH staff including the Technical Assistant to the project started thorough data quality checks from May 2010. This was necessary to ensure that the data utilised in rainfall and pest and disease analysis and other work in the CAMI project was of a high standard. Quality checks had also to be done on all data rescued through the project. Climatological analyses, which are done on a weekly basis (approximately two days per week by CIMH core staff, in addition to the Technical Assistant) involves data analysis (rainfall/temperature) of stations from all participating countries namely:-

Rainfall / temperature trends
Drought analysis
Extreme value analysis
Analysis linking rainfall determining impact of El Niño/Southern Oscillation and the North Atlantic Oscillation
Dry day and dry spell analysis
Potential Flood rains

This analysis which continues in year two will be presented in all Farmers Forums.

The Project Coordinator, Technical Assistant and one other CIMH staff member benefitted from a training attachment at the University of Reading – UK, which furthered the application of INSTAT and GENSTAT to the analysis of climatological data.

The data rescue exercise involved a member of CIMH staff visiting the various territories to capture data in digital format. Staff at the NMHSs assisted in this effort (two cameras were used in each instance, one by the CIMH staff and the other by the NMHS staff). During the months prior to the visit, they also ensured that all data was readily available and easily accessible and during the visit, that the CIMH employee was taken to wherever the data was being stored in the event that it was not all kept in the same location (5 countries 3 days each). Guyana was done in May, Grenada in June, St. Vincent in September, St. Lucia in October and Antigua in November 2010.

Scanned data was sent from Jamaica for input.
The data rescue exercise was underestimated since data is still being entered by the further contracting of one of the data entry clerks (by CIMH) to ensure completion of the activity. This is seen as a priority by CIMH since it is one of their regional mandates.

CARDI representatives also attended the first stakeholder and steering committee meetings and the Rainy Season Predictors and Interpretation and Management Workshop. Dr. Leslie

Simpson of CARDI was also instrumental in furthering CAMI plans, being involved in discussions and interviews for consultants in Rainfall Analysis and Pests and Diseases and organising the Pests and Diseases workshop in Jamaica that took place at the beginning of Year 2. He was also instrumental in liaising with other country branches of CARDI in seeking potential climate data to be rescued.

Belize commenced planning for the second stakeholder meeting which was held there on December 7th – 8th 2010.

Planning for each of the pest and disease meetings began in countries in September 2010.

The budget for the first year underestimated the input by CIMH (the Applicant), particularly with respect to the data rescue related activity and preparation of data to be analysed. This meant that four staff members instead of the three originally anticipated had to be employed on the project. Not originally budgeted in the activity of The Applicant, but a critical part of the activity included:

-Quality check and control of meteorological data rescued (this is apart from the data entry by the data entry clerks) and others submitted electronically for use in the project, and this was done by the Applicant's staff.

-Creation and maintenance (actually done by one of the Meteorological Data Quality staff with an IT background) of the project web page.

Other Workshops / Seminars attended by Project Manager

Presentations made on the CAMI Project by Project Coordinator

"From Strategic Plan to Implementation" presented at the conference on **Climate Change and Agriculture in the Caribbean: Protected Agriculture – An Adapatation Option** 17-19 October 2010, Grenada. Sponsored by the CTA and CARDI. This was one of the conferences as part of the annual Caribbean Week of Agriculture held in Grenada. The presentation discussed the birth of the CAMI concept, which was embedded in a strategic plan developed for agrometeorology in the Caribbean, to the point where it is being implemented.

"Weather and Climate Information for policy making and on-farm decision making" at the **Seminar for farmers of the Barbados Agricultural Society.** This seminar was prompted by agricultural losses from weather and climate phenomena in Barbados during the year. Hurricane Tomas was the most recent of these, but losses earlier in the year were catastrophic from drought; and flood once the drought was over. It was a year of weather/climate –related losses. The presentation showed how CAMI through the provision of information to farmers and the wider agricultural community will be able to reduce such losses as well as reduce the costs of inputs on farms.

Added to these Mr. Gary Ramirez, the CAMI focal point for the Ministry of Agriculture Belize, wrote an article on CAMI in Issue 9 of the Belize Ag Report (Nov-Dec 2010).

Reason for modification for the planned activity <please elaborate on the problems - including delay, cancellation, postponement of activities- which have arisen and how they have been addressed> (if applicable):

Results of this activity <please quantify these results, where possible; refer to the various assumptions of the Logframe>:

2.2. There were no contracts (works, supplies, services) above 5000€ awarded for the implementation of the action during the reporting period.

2.3. Please provide an updated action plan [2]

The Updated Action Plan is attached as part of the interim financial report.

[2] This plan will cover the financial period between the interim report and the next report**.**

Year Two													
	Semester 1						Semester 2						
Activity	Month 1	2	3	4	5	6	7	8	9	10	11	12	Implementing body
Pest Meetings	Planning by NMHSs	Jamaica Belize Planning by NHMSs	Grenada St. Lucia Trinidad Guyana Dominica			Planning by NMHSs		St. Vincent and the Grenadines	Antigua and Barbuda				NMHSs
Farmers Forums					Planning by NMHSs and CIMH, procurement of expert, preparation of material and venues and invitations of farmers			Trinidad and Tobago Grenada St. Vincent	St. Lucia Antigua and Barbuda Dominica	Belize Jamaica	Barbados Guyana		NMHSs, CIMH
Pest Management Workshop				Planning and preparation		Held in Barbados April 4-5							CIMH
Publications and Communications Strategy Workshop				Planning and preparation		Held in Barbados April 6-7							CIMH
Pests and Diseases CARDI and CIMH attachment at International Institution											CARDI CIMH attachment in Italy		CIMH
Data Rescue	Preparation by Trinidad Met Service		Trinidad				Preparation by Dominica and Belize Met Services		Dominica	Belize			NHMSs, CIMH
2nd Stg. Committee Meeting	Planning by Belize Met Service	Meeting held in Belize December 7-8											Belize Met Service

3rd Stg. Committee Meeting									Preparation by Guyana Met Service and CIMH	Guyana	Guyana Met Service
Rainfall and Temperature Analysis	CIMH staff and the Technical Assistant continue Data Quality Checks and Rainfall and Temperature Analysis Preparation of presentations for Farmers Forums										
Development of Research Approach for Regional Pest and Disease Modelling				Preparation							CARDI Pest and Disease Consultant
Crop weather Modelling/Simulation									Planning and Preparation		CIMH, CARDI and WMO, Consulting Institution

3. Partners and other Co-operation

3.1. How do you assess the relationship between the formal partners of this Action (i.e. those partners which have signed a partnership statement)? Please specify for each partner organisation.

Working relationships existed amongst the Meterological partners of this action for many decades. The countries represented by National Meteoroloical Services in this Action are ten of sixteen member states of the Caribbean Meteorological Organisation of which the Caribbean Institute for Meteorology and Hydrology is the Training, Research and data archiving arm. At least 80 % of the staff of CMO NMHS were trained by CIMH. Also, CIMH is a WMO Regional Training Centre and collaborates on many initiatives with WMO.

The NMHS (except Grenada) are contributing members of WMO. So there has already been an atmosphere of trust in collaborating which continues in CAMI. CARDI, and agricultural research and development institution does not share the history with the Meteorological Services, but as a Caribbean Regional Organisation, has a longstanding relationship with the CIMH, the applicant and the CAMI project coordinator. Such a history of collaboration and atmosphere of trust is paramount for successful implementation of projects. Communicating on the Action because of these has been very cordial as the main players are quite familiar with each other.

The benefit of the Action allows for collaboration in an area of meteorology that there is not as much collaboration and this marks a key breakthrough in the region in agrometeorology. This provides an opportunity for the NHMS to develop similar relationship with agricultural institutions including CARDI.

3.2. How would you assess the relationship between your organisation and State authorities in the Action countries? How has this relationship affected the Action?

The major State Authorities with which CIMH interacts within this Action are the National Meteorological Services and their relevant Ministries. These relationships have been very strong for many decades and have been discussed previously. The other major sector authorities with which the Action requires CIMH to interact are the Ministries/Departments of Agriculture. In some countries (for example Barbados and Guyana) the NMHS are already administered by the Ministries of Agriculture. In the other cases, the strength of the relationship varies with strong history of interaction in some cases and weaker ones in other cases. But in all cases CMH have had some level of direct interaction with the Ministries of Agriculture in the past, whether through our training or research programmes or as a result of installing or calibrating their instruments.

The primary concern during the Action is the pace of the data rescue, which has more to do with tracking or accessing some forms of paper data than any relationship with State Authorities. For example, in the case of Dominica, authorities have reports of station records, but likely due to poor record keeping the exact location of the data has not yet been determined. In the case of Trinidad and Tobago, data exist in a room in the Water Resources Authority. It has been reported that this data has been locked away in a room for many years that have been flooded during a rain storm earlier in the year. This room has been classified as a bit of an environmental hazard and some of the paper data may have to be cleaned before capturing. We may find that there may be similar concerns with the data in other countries, for example Dominica. In these cases, what is required for the

capture of such data may go beyond what CAMI can provide. CIMH is currently seeking funding through other channels to tackle these very difficult cases to augment what CAMI can make available.

There have also been the odd occasion where staff could not have been released or were unavailable to attend a meetings/workshops. These three cases were because of internal circumstances rather than relationship issues. Such occurrences are to be expected during and Action. For example, the Rainfall Analysis workshop came days after a General Election in Trinidad and Tobago, and where the Meteorological Officer was released the new Authorities were still in the very early process of assessing its workforce and determining its strategy and therefore a Ministry of Agriculture person was not released.

Other than these, Ministries of Agriculture have been very responsive and keen to take part in the Action. They have taken part in the Stakeholder meetings and joined the Rainfall Analysis workshop (apart from those countries affected by the strike action of the regional airline carrier) for the last two days as designed.

3.3. Where applicable, describe your relationship with any other organisations involved in implementing the Action:

Subcontractors

The relationship with the Statistical Services Centre (SSC) of the University of Reading, and in particular Dr. Roger Stern, is not a new one. Staff from CIMH (Mrs. Lisa Kirton Reed, Ms. Lisa Agard, and Mr. Anthony Moore) involved in this action have graduated from the SSC programme in Statistics in Applied Climatology. Staff of other CAMI partner institutions (the National Meteorological Services of Dominica, Trinidad and Tobago and St. Vincent and the Grenadines) involved in this Action have also been graduates of this programme. Also, the project coordinator was a student of Dr. Stern in Statistical Climatology during his graduate degree at the University of Reading. It is this wealth of world renowned experience in the field that CAMI sought to draw upon. This, we think went very well to the point where, because of this initial CAMI effort, a full programme is begin developed with the SSC in Statistics in Applied Climatology in collaboration with the Caribbean Community Climate Change Centre.

Farming Community

CIMH does not have a strong history of dealing directly with farmers. As a regional organization, CIMH tends to have more of a working relationship with agricultural ministries, with the intention that national Meteorological Services and Agricultural Extensions Services will deal directly with the farming communities in their respective nations. This has not been successful in the region since information is not being tailored for the farming community – hence the genesis of CAMI. However, due to CAMI, CIMH has developed a relationship with the Caribbean Farmers Network (CAFAN) and some its national associates (e.g. the Barbados Agricultural Society and the Trinidad and Tobago Agricultural Society). It is expected that the relationship with this group would grow even stronger once the farmers' forums begin in 2011.

Relationship with Other non-Partner Organisations

As the regional agricultural research institute, CARDI has a longstanding working relationship with agricultural Ministries and departments, providing R & D in many aspects of agriculture. This work has involved working with the farming community in many initiatives. National Meteorological Services are often called upon by their agricultural ministries to

provide climatological data and information as well as forecasts. Whereas in the past some of the member states issued farmers forecasts, only Belize now has a routine agrometeorological forecast. Prior to CAMI, dialogue with the agricultural community was on an as needed basis.
CAMI has provided the forum for Meteorological Services and agricultural entities to engage in meaningful discussions as to the needs of the agricultural policy makers and farmers, whilst also providing an avenue for meteorologist to outline their capacities for provision of information. During the first year of CAMI, this dialogue has taken place between meteorologists and agriculturists to a large extent. There had been some discussions during the Stakeholder Meeting with representatives of the Caribbean Farmers Network. However, engaging the farming community in such discussions will take place in earnest from year two during the farmers' forums.

3.4. Where applicable, outline any links you have developed with other actions

3.5. If your organisation has received previous EC grants in view of strengthening the same target group, in how far has this Action been able to build upon/complement the previous one(s)? (List all previous relevant EC grants).

4. Visibility

How is the visibility of the EU contribution being ensured in the Action?

Banner designed for use at all meetings.
Posters developed and sent to all partners
Brochures created and sent to various organizations. Most brochures to be distributed at the farmers forums
All contain the EU logo prominently displayed.
Website developed

The European Commission may wish to publicise the results of Actions. Do you have any objection to this report being published on EuropeAid Co-operation Office website? If so, please state your objections here.

Name of the contact person for the Action: ……Adrian Trotman……