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, Caribbean Agricultural Research and Development Institute (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, 2010 to November 09, 2011

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

Final beneficiaries &/or target groups[1] (if different) (including numbers of women and men): Community Based Organizations; Local Authorities; Non Governmental Organisations; Agricultural Research Organizations/Researchers. Farming Community in the Caribbean Region (about 1.4 million)

1.8. 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 Second Steering Committee Meeting of the Caribbean Agro-Meteorological Initiative (CAMI) Project was hosted by the National Meteorological Service of Belize on December 07th, 2010, at their offices located at the Philip Goldson International Airport, Ladyville, Belize.

[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.

Attendees included representatives from the National Meteorological Offices of Antigua & Barbuda, Belize, Grenada, Jamaica, St. Lucia, and St. Vincent. The Caribbean Agricultural Research and Development Institute (CARDI) was also represented at the meeting along with two participants representing the World Meteorological Organization (WMO).

The Project Coordinator started out with a look at year one, its successes and shortfalls with a view to making up for such shortfalls. He then went on to look at years two and three, pointing out that the real benefits are only realized when the farmers are beneficiaries to any output.

He also touched on the other initiatives coming out of or with strong links to the CAMI project. This included 1) the Caribbean Statistics in Applied Climatology (SIAC) programme, which provided additional training in Statistics beyond that provided by CAMI and 2) Re-establishment of the Caribbean Regional Climate Outlook Forum which is providing the skill set in seasonal forecasting and leaving the CAMI project to focus on the interpretation.

A presentation on the background for how the project was developed was made for those who had not yet seen it, after which Mr. Trotman advised that he hoped that by year two the project would still be on track. He announced plans, subject to ACP-EU approval for the change in location for the final conference to be held at the end of year three and the reasoning behind this change. The final Steering Committee meeting was scheduled for Jamaica and the Final Stakeholder conference for Barbados, but it was recommended that, in order to limit the traveling time of Met Office staff, that the two events be held consecutively.

Mention was made of the publications workshop, which is scheduled for early in 2011, and along with this, the presence of the Technical Centre for Agriculture and Rural Cooperation (CTA, a European Union agency) supporting a communications strategy. After a presentation by Mr. Trotman at the CTA-sponsored Protected Agriculture Workshop in the Caribbean Week of Agriculture celebrations in Grenada in 2010, a CTA communiations representative Ms Oumy Ndiaye made the suggestion that the CAMI-proposed production of newsletters and bulletins be part of an entire strategy for communicating weather and climate information to farmers. The CTA representative said that her organisation would be willing to assist with this. This possibility will be pursued by the Project Director. Further discussion of the strategy at the Steering Meeting included Ms Ndiaye via conference call from her office in Holland.

Mr. Trotman announced that he is pursuing a funding agency to expand on the work which CAMI has started with respect to data rescue since it was clear that in many countries there was still much more data left to be rescued. This new initiative is expected to cover both meteorological and hydrological data, and would also include the six territories of the Caribbean Meteorological Council not involved in the CAMI project.

Activities scheduled for year two were discussed. These included:-

- Pest and Disease Modelling

- Training in developing bulletins, newsletters and other information publications
- Farmers Forums
- Crop Simulation Models – DSSAT, APSIM
- Mid-Term Evaluation
- SIAC and Seasonal Climate Prediction

Mr. Robert Stefanski of WMO was included in a discussion on publications training, also via conference call, and pointed out that a good communications strategy involved knowing who your audience is and how to get information to them. From the discussion it was agreed that Mr. Stefanski would be the trainer on the upcoming CAMI publications workshop.

Further discussion centered on all activities (mentioned above) scheduled for year two.

A full report is attached at **Annex 1**.

The third Steering Committee Meeting is scheduled for the first week in December 2011 to be hosted by the Government of Guyana.

Stakeholder Meetings

The Second Stakeholder Meeting was hosted along with the Belize Pest and Diseases Decision Support Meeting, by the National Meteorological Service of Belize on December 8th 2010, at the Radisson Hotel in Belize.

Attendees included Steering Committee representatives from the National Meteorological Offices of Antigua & Barbuda, Belize, Grenada, Jamaica, St. Lucia, and St. Vincent and the Grenadines; CARDI, CIMH and WMO. Very critical to this meeting were the representatives from the Ministry of Agriculture and the farming community in Belize. There was also participation from the World Wildlife Fund (WWF). There were 23 persons engaged in this meeting.

The Project Coordinator spoke on the specific objectives of the Pest and Disease Seminar, and outlined the objectives of the CAMI project.

Various presentations were made including one by Mr. Dennis Gonguez, Director of the National Meteorological Service of Belize; on the role of the Belize Meteorological Service in agriculture.

Other presentations included "Weather and Climate Information Needs in Agriculture", by Mr. Gary Ramirez of the Ministry of Agriculture in Belize. Mr. Ramirez's presentation related to activities undertaken by the project to date, and the need for weather and climate information in agriculture. It was based on findings identified at the first Steering and Stakeholder Committee meetings held in February 2010, and a Rainfall Season Predictor and Interpretation Workshop held in June 2010, both in Barbados.

General discussion followed which centred on how the different agencies can assist each other in seeing the objectives of the project to fruition in Belize.

Dr. Simone Orlandini (one of the WMO representatives based at the University of Florence, Italy), gave a presentation which included risks associated with pests and diseases, meteorological and biological data needs of pests and diseases models, and utilization of outputs from the models.

Mr. Anil Sinha (CARDI, Belize) spoke on the major export crops and staple crops in Belize. He looked at the various insect pests and diseases affecting these crops.

Dr. Leslie Simpson (CARDI, Jamaica) moderated a discussion on Pest and Disease influences and potential weather and climatic interaction in Belize.

As stated in the logical framework, this will help to ensure that policy makers and extension agencies in Belize understand fully the implications of climate predictor for strategic planning.

This was the first step in preparation to work on pests and diseases models and to make sure that stakeholders understand the benefits of these models, particularly towards the reduction in use of insecticides and ultimately an increase in farmers' incomes.

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

Regional Technical Workshops/Seminars

Pest and Disease Modelling Seminars

These seminars were conducted by Dr. Simone Orlandini of the Department of Plant, Soil and Environmental Science - University of Florence, and Mr. Anil Sinha of CARDI Belize, during the period December 8th 2010, to January 28th 2011. During this period seminars were conducted in Jamaica, Trinidad and Tobago, Guyana, Grenada, St. Lucia and Dominica. Barbados' seminar was conducted on April 6th 2011.

During the first trip in Caribbean area, including Belize and Jamaica, the following elements were presented:

i. Effect of weather conditions on pest and disease
ii. Main elements of modelling approach
iii. Implementation and application of modeling for pest and disease control

During the second trip organized in January, the presentation was revised to give more details about the biological element of pest and disease development, to satisfy the needs of the participants, mainly having a physical background.

Meetings generally sought participation from crop protection units of Ministries of Agriculture, farmers representatives and meteorological services.

During each meeting the importance of collecting real data for the development of models was strongly emphasized. Both biological (crop, pest and disease) and meteorological (temperature, relative humidity, rainfall, leaf wetness) data are the basis for model development, calibration and validation. A form was prepared to support country activity, and the following project phases oriented to the selection of a limited number of case studies to demonstrate the importance of models for crop protection management. The form includes all the main information required for the evaluation of the importance of diseases in the Caribbean area. Each country was given one month to provide all the requested information.

Results were collected from the majority of the countries, and collated to show the major pest and disease concerns for each country.

The seminars for the two remaining countries were conducted by the Project Coordinator Mr. Trotman, whilst there for the CAMI farmers' forums.

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

As was the case at the Belize Stakeholder meeting this was a continuation of preparation to work on pests and diseases models for common solutions in the region and to make sure that that stakeholders in each CAMI country understand the benefits of these models, particularly towards the reduction in use of insecticides and ultimately an increase in farmers' incomes.

Weather and Climate Related Pests and Diseases Modelling Workshop

A training workshop on Weather and Climate Related Pests and Diseases Modelling was held at the campus of the Caribbean Institute for Meteorology and Hydrology from April 4th - 5th 2011.

The purpose of the workshop was to provide training in pest and disease modelling focussing on weather and climate being the main drivers of the models. There was also some emphasis on seasonal climate application.

Attendees included representatives from the National Meteorological Offices of the ten participating countries, CARDI and the host CIMH. There was also participation from the Barbados Ministry of Agriculture and some Barbadian farmers. Twenty three (23) persons across CAMI countries and institutions were trained during the workshop.

The Project Coordinator noted that one of the key aspects of this project is to engage the farming community. Having one or two persons in the meteorological service form a relationship with farmers would help both entities understand each other in terms of what is needed and what could be provided. Training of these Meteorological Services personnel in key aspects of agro-meteorology will also move the dialogue to provision of tailor-made weather and climate information that would facilitate improved on-farm decision making.

Dr. Simone Orlandini of the Department of Plant, Soil and Environmental Science, of the University of Florence, Italy gave a presentation on Monitoring of Epidemics: disease, pathogens, insect, host. He looked at measurements and estimation of these before engaging participants in a exercise.

He highlighted that the tropics and developing countries are those regions mostly affected by constant crop loss as a result of lack of technologies and high temperatures. In the exercise given, participants were asked to determine the incidence and severity of downy mildew and powdery mildew on a given plant.

Dr. Orlandini's second presentation was entitled 'Basic Elements of Modelling for Pests and Disease Applications'. In this presentation Dr. Orlandini highlighted that in a biological system there may be a large number of elements inter-relating. These elements must be simplified and the most important element identified.

He informed that a simulation model is a simple representation of pest and disease that aims to study infection and damages and to compute responses to the environment. These models can either be descriptive (empirical) or explanatory (mechanistic). The descriptive model defines the behaviour of the system in a simple manner whereas the explanatory model consists of a quantitative description of the mechanisms and processes that cause the behaviour of a system.

In his presentation of Application of Agro-meteorological Model to Crop Protection, Dr. Orlandini gave an outline of the input data and hardware needed to acquire them, models used for crop protection, the use and application of such models as well as potential means of dissemination of information (bulletins, cellular).

The presenter pointed out the roles of some of the key meteorological variables on diseases development – solar radiation important for growth, temperature and photoperiod for development, relative humidity and rainfall provides critical free moisture (leaf wetness), and wind supports dispersion. An important part of the presentation was the equipment needed to acquire these measurements, including the technology of remote sensing.

Dr. Clyde Fraisse of the University of Florida, USA presented on Climate Variability and Impacts on Agriculture. Using examples from Florida, he emphasised the fact that we need to talk to farmers about what is happening now as well as in the future rather than just looking at seasonal forecasts.

In his overview of the climate variability in the South East U.S.A, he states that El Niño phase brings with it a cooler phase as opposed to Belize and the Eastern Caribbean, and described the impacts on agriculture in Florida.

He also emphasised the importance of looking at the past to see what occurred under certain conditions noting that analogue years would be an important determinant in what the potential impacts of the forecasted season could be. He also indicated that opportunities exist for adaptation to climate change.

Participants then engaged in an exercise using agroclimate.org where they were able to play out the potential impacts of El Nino and La Nina events on the climate of specific parts of Florida. The impacts of these ENSO phases and resultant climate on a strawberry disease were also played out.

Day two of the workshop started with an Application of Generic Models. Here different modelling approaches were examined for example Mechanistic and Empirical approaches, as well as the Fuzzy, Neural approaches. Dr Orlandini also engaged the participants in an Infection and Degree-Days Model Exercise.

The empirical approach utilises a relationship between one or two parameters with pest/disease development and may be easier to develop and apply in a data sparse region like the Caribbean. Dr. Orlandini pointed out that the disadvantages of the Fuzzy, Neural approach is that it does not give any information about the system but just gives an output. In using a model it is useful to understand the system. The Fuzzy approach however, allows you to use quantitative and qualitative information.

Dr. Orlandini then outlined the use and application of the models for climatic classifications, for field monitoring and forecasting for crop prediction, and for future climate scenarios for climate change.

When producing information from these models it is important for farmers to know that it is a forecast to support their activity. It is not reality and each farmer would have to adapt the model output to make their own on-farm decisions.

Participants then engaged in an online exercise where they observed leaf infections.

Mr. Sinha then gave a Summary of National Concerns. He informed participants that during December 2010 and January 2011, Dr. Orlandini and he met with national agriculture (including extension officers) and meteorology officials, farmers and officials from regional agricultural organisatons in seven of the ten CAMI partner countries. These meetings were organised to determine the main national pests and diseases concerns perceived to have some association with the weather and climate conditions. The output from these meetings will help to determine the way forward for the modelling and information-generating exercises for pests and diseases.

A summary of these meetings, including a potential way forward for the CAMI pests and diseases activity, was presented by Mr. Sinha. From the national dissertations; banana, sugar cane, citrus, pepper/tomatoes, coconut and soybean, and their pests and diseases were determined to be the ones to be pursued in the modelling exercise,

Of these, it was thought that modelling efforts would focus on Black Sigatoka, White flies (prevalent in the dry season), Citrus Psyllid, and Asian Soybean Rust (Belize only).

It was agreed that the pests/disease of most importance would be modelled by Dr. Orlandini and Mr. Sinha, along with colleagues from CARDI and CIMH.

Dr. Orlandini then took participants through a Leaf Wetness Estimation Exercise where they were presented with several methods that can be used to estimate leaf

wetness duration. The exercise conducted was to obtain the best approach for estimation of leaf wetness duration of the black sigatoka.

As outlined in the logical framework, this training served to enhance the capacity of Meteorological Services, CARDI and CIMH to develop crop models.

The full report is attached at **Annex 4**.

Publications and Communications Strategy Workshop

The Publications and Communications Strategy for Farmers Workshop took place at the campus of the Caribbean Institute for Meteorology and Hydrology on April 6th and 7th 2011.

The purpose of the workshop was to 1) provide training for CAMI partners in the production of weather and climate bulletins for the farming and wider agricultural communities and 2) clearly identify the resources needed by the project to begin the formulation and implementation an effective communication strategy.

Attendees included representatives from the National Meteorological Offices of the ten participating countries and CARDI, along with local farmers and representatives from the Technical Centre for Agricultural and Rural Cooperation (CTA).

Mr. Stefanski in his introduction, gave brief insight to the role of the World Meteorological Organization (WMO) with respect to agricultural meteorology. He stated that WMO covers both weather and climate on a short term as well as long term scale, and also supports applications of meteorology to the management of agriculture, livestock, forestry, rangelands and fishery sectors. WMO assists Member countries in developing/establishing their agro-meteorological services particularly on:

- Operational use of knowledge concerning weather and climate for sustainable agricultural management through conservation and better use of natural resources.

- Use of weather and agro-meteorological observations, forecasts and warnings for operational purposes.

Mr. Stefanski also highlighted potential users of agro-meteorological information including:

- International officials (i.e. Red Cross, WFP, UM)

- Government officials

- Extension Agents

- Farmers, ranchers, foresters, fishers

- Media

- General public

Participants from CAMI countries then highlighted the products/services provided by their meteorological service.

Mr. Stefanski then gave a presentation on Translating daily weather forecasts into agro-meteorological forecasts and advisories

He noted that there are various types of agricultural advisories which include:

- Sowing/transplanting of rainy season crops based on the onset of the rainy season.
- Sowing of post rainy season crops using residual soil moisture for better germination and plant stand
- Fertilizer application based on wind conditions
- Delay in fertilizer application based on intensity of rain
- Prediction of occurrences of pests and diseases based on weather
- Irrigation at critical stages of the crop
- Amount and timing of irrigation using meteorological thresholds.

He stressed that there are two questions which one must bear in mind:

- What are the weather/climate events that impact agricultural decision-making?
- How to relate weather/climate information to meaningful agricultural actions/practices?

Mr. Stefanski's second presentation was entitled - Translating seasonal climate forecasts into seasonal agro-meteorological advice

In his presentation, Mr. Stefanski indicated that producers use climate information to assist with many decisions. Some of which are:

- Crop choice
- Choice of cultivar
- Mixture of crops
- Fertilizer use
- Pest and disease control
- Time of the harvest

Seasonal climate forecasting has no value unless it changes a management decision. Such decisions may include: which variety to plant given, for example, low rainfall probability values or high risk of damaging frost during anthesis; or, how much

nitrogen to apply given current low soil moisture levels and low probability of sufficient in-crop rainfall?

He noted that for effective climate communication there are some questions to consider:

- Is the information relevant for decisions in the particular agricultural system?
- Are the sources/providers of information credible to the intended user?
- Are the farmers receptive to the information and to research?
- Is the research accessible to the policymaker or decision-maker?
- Is the information compatible with existing decision models and farming practice?
- Do decision-makers have the capacity to use information?

Some channels of communication include:

- Workshops and meetings
- Presentations and briefings
- One-to-one technical assistance
- Coordination with other ongoing projects
- Work with the local media
- Website development and maintenance
- Media (mass media and information)

Day two of the workshop focused on COMMUNICATONS STRATEGY

Thirty two people, (mainly from CAMI states) were engaged in this very important discussion toward developing a communication strategy. This session was led by the CTA consultant Mr. Ian Ivey.

Mr. Patrick Prendergast of CARIMAC, University of the West Indies, Jamaica presented on Information for Farmers – the CARIMAC experience.

Mr. Prendergast gave an overview of CARIMAC (Caribbean Institute of Media and Communication). This is a "step-by-step/piece-by-piece" approach in linking farmers to information and has partnered with the FAO (Food and Agricultural Organization of the United Nations). CARIMAC extends training opportunities in a more strategic way, including for climate change adaptation and one of their objectives is providing professional training for extension officers.

From his experience, Mr. Prendergast states that there are two levels which farmers need for communication as it relates to climate change adaptation:

- Information for learning new technologies. This allows them to adapt and mitigate climate change impacts.

- "Just in Time" weather information. This allows them to plan and respond to imminent weather related impacts.

Mr. Prendergast also highlighted gaps in the Farmer-Led Process, some of which include:

- Farmer-based technologies not fully documented and tested
- Farmer-based technologies not packaged and shared across the island
- Extension constraints: reduced staff, mileage, equipment and technologies

He also stated that there are advantages and disadvantages of different types of Media. An effective communication strategy usually uses a mix of at least 2 or 3 different types; and the choice of media and format depends on the audience(s), budget, the communication channels best for your specific audience, how long the communication intervention will continue and how critical it is to encourage genuine participation for social change.

Mr. Michael Als of Radio Toco, Trinidad and Tobago presented of - Experiences from Radio Toco

In his experience from Radio Toco, Mr. Als stated that we must consider seriously changing the paradigm and do things in an exciting way. Success in this project is as a result of asking questions. Therefore one of the rules was not to do anything without asking others what they think (this may be in the form of a questionnaire or a discussion).

Mr. Als also indicated that as a farmer you need to pay attention to the weather and climate conditions. He suggested that in the communication of technology there must be hands-on training and one needs to be very clear about what you are suggesting.

Mr. Ian Ivey of NEXT Corporation in Trinidad gave examples of approaches to communicate with farmers and rural communities

Mr. Ivey highlighted 4 key things to be considered when trying to communicate information:

1. Communication is 50% talking and 50% listening
2. The customer is king or queen
3. You must give people a gift of time
4. We need to shift from "educating" to engaging as interaction is essential.

Although we need both the real world (face-to-face, public speaking etc.) and digital (face book, twitter etc.), there needs to be a balance between both.

Participants then engaged in the first working group exercise where they discussed what information should be made available to the farmer, the method of dissemination and the possible strengths/weaknesses. From these discussions the three most important outputs were:

- Training to use information. This would be done via small workshops with the advantage of sharing ideas and knowledge.

- Engaging and collaboration. This type would be done through focus groups, feedback, workshops and prototyping. You can learn a lot from regular feedback however, it has its limitations as participation time is required.

- Early warning for weather systems via SMS, media, television and radio. This has the advantage of wide coverage but would be futile where there is infrastructure failure.

The second group exercise involved discussions on what needs to be done, by whom and by when. Listed below are the three main areas which need to be tackled:

- Training for farmers and meteorological service staff to enhance communications. This is to be done by the meteorological service as well as the farmer. Target time – 3 months.

- Hands on help with retrieving of information through SMS etc. The service providers would be responsible for this task. Target time – 1 month

- Training in communications to understand each other's needs. The meteorological service and the farmers are responsible for this task. Target time – 6 months.

It was suggested that 2 – 6 months be added to the target times to allow for the "bureaucratic delays" common in the region.

Mr. Stefanski then gave a review of agro-meteorological bulletins from developing countries and gave guidance on Development of draft bulletins for each country outlined the contents of agro-meteorological bulletins

In conclusion of the workshop the next steps to be taken were highlighted:

- Action items: climate bulletins, crop calendars, create an email list, put products on the web

- Agro-meteorological bulletins should ideally be weekly or every 10 days (monthly would be too long)

- Make agro-meteorological forecasts with the same period of weather forecasts

- Have both national and/or regional bulletins. Some services may and seem to want to provide national information whilst others may initially prefer to be a part of a regional product.

The time frame in which to begin to produce national and regional bulletins would be 3 to 6 months. CIMH will begin to work towards producing a regional bulletin which would have input from participating countries. The 3 to 6 months time frame suggested that at least regional bulletins should be produced by October 2010.

As stated in the logical framework, this training paved the way for the National Meteorological Services and CIMH to develop bulletins and other forms of information in a language that can be better understood by the farming and extension communities.

The Communication Strategy meeting; which is an external (funded by the CTA), but supporting activity to CAMI, made for a clearer understanding of communication needs and approaches for National Meteorological Services and CIMH to pursue. It also paves the way for the future development of a Regional Communication Strategy for Weather and Climate Information for the Farming Community.

The full report is attached at **Annex 5**.

Farmers Forums

Farmers' forums were conducted in Antigua and Barbuda, Dominica, Grenada, Guyana, Trinidad and Tobago, St. Lucia and St. Vincent and the Grenadines.

In the words of the mid-term evaluator of the CAMI project during his debriefing meeting, "the farmers' forums conducted during Year 2 of the projects were 'absolute hits'". Many farmers and extension services officers that support them were very pleased with the forums as they were allowed, in many cases for the first time, to interact with meteorologists. They were very attentive to the explanations of terms used by meteorologists, which most of them - despite which country they were in - admitted they were ignorant of the interpretation of many of the terms. They would at times make incorrect assumptions of the weather because of the mis-interpretations.

In this first round of forums, presentations were also made on their local/national weather and climate by their national Meteorological Services with specific focus on the year 2010. The year 2010 was a rear one for rainfall extremes. In the entire Caribbean, from Guyana in the southeast to Jamaica in the northwest, 2010 began with severe to exceptional drought up until April/May (depending on which part of the Caribbean one was), only then to translate into excessive rainfall that were often accompanied by flooding and landslides. That year, fresh in the memories of the farmers attending the forums made the sessions even more meaningful as they related to the devastation and high yield losses associated with these extreme rainfall events during that year.

Other presentations came from the staff of the Caribbean Institute for Meteorology Hydrology, including the Project Coordinator. The CIMH-rendered presentations focussed on seasonal forecasting and interpretation, extremes in rainfall (drought and flood), climate change and trends, and pests and diseases modelling.

CIMH produces probabilistic seasonal rainfall forecasts for the Caribbean basin. In his presentation, the Project Coordinator (PC) showed that the period of drought which began during the climatological rainy season was predicted by scientists of the CIMH-based Caribbean Drought and Precipitation Monitoring Network (which he coordinates) and alerts were sent to all CIMH member states in the region. Essentially two things occurred that hampered adequate responses to the drought in the region – (i) dissemination of the information was inadequate at the national level and (ii) the region does not often have to deal with droughts of this severity and were often unsure of how to respond since there were no mechanisms or robust policies in place in many of the countries to respond to such severe events. Since 2010, this has been changing as policy makers at the national and regional level have begun to address

this. On the other hand, the excessive rainfall of the latter half of 2010 that has lasted well up to the time of the forums presented a totally different concern to the farmers. Mr. Trotman also showed that the Precipitation Outlook prepared by CIMH also forecasted the high likelihood of these events. Farmers agreed that had they been made aware, that they would have responded very differently on their farms. This placed into focus the need for dissemination of such information directly to the farming community and in a 'language' they can understand.

Other well received, and more often than not eye-opening presentations for the farmers, were the presentations on climate change and climate trends. These presentations were made by the CAMI and the PC's technical assistants, who worked tirelessly on analysis of rainfall and temperature data for the ten CAMI states. Startling for most of the participants was the extent to which Caribbean temperatures have risen and will continue to rise due to anthropogenic climate change. Many of them have to rethink their approaches on farms, as the increasing temperatures, with more increasing episodes of heat stress, are concerns in both crop and livestock agriculture. Also of major interest to them was the high probability of more frequent and severe episodes of drought and floods, as climate change scientists, both global and regional project decreasing rainfall totals with more intense episodes of rainfall, even though the current trends have often not statistically proven the changes in rainfall as yet. However, the Project Coordinator warned farmers that even though there were as yet no clear statistically significant changes in the rainfall, that temperatures continue to change and that the atmosphere being a fluid, would eventually result in statiscally significant changes in other weather parameters including rainfall.

Participants of the forums were also exposed to the major drivers of Caribbean rainfall, including the El Nino Southern Oscillation (ENSO); the pests and diseases activities of the project; the training workshops and attachments due in Year 3; and plans for the development of a strategy for the communication of weather and climate information for farmers in collaboration with the Technical Centre for Agriculture and Rural Cooperation (CTA) as a supporting initiative to CAMI.

A critical part of the day was when farmers, extension services officers and meteorologists were divided into working groups to sit and discuss issues with respect to weather and climate in agriculture. In these smaller groups, farmers and extension services recommended the type of weather and climate information and services that would best serve their needs, whilst meteorologists got the opportunity to say what weather and climate information and services they provide and can realistically provide in the future that can satisfy their demands. These break-out-group discussions were provoked by questions prepared by the CAMI Steering committee, the presentations during the pre-lunch sessions, and three videos that illustrated how farmers in other parts of the world utilise weather and climate information, and how regular farmers field schools, like the forums they were attending helped farmers to increase their yields.

All reports on Farmers Forums are attached at **Annex 6.**

As outlined in the logical framework, the farmers' forums enhanced and in most cases created a basis for dialogue, interaction and mutual understanding between Meteorological Services, Agricultural Research and Extension Services and farmers.

The forums also acted as capacity building/training sessions for extension officers and farmers to understand and interpret the products available and for the meteorologists to better understand product and information needs of the farmers.

Data Rescue

The data rescue exercise was completed for five countries in 2010. During 2011, the remaining four countries – Trinidad, Jamaica, Belize and Dominica were completed.

Early in Year Two, data collection was done in Trinidad and Tobago and Barbados. In the case of Trinidad and Tobago, the data collector was able to capture data from many stations, particularly for rainfall. Most of these stations did not have the requisite (close to 30 years) amount of data for climatological analysis, but the spread would allow for fair country wide cover when it comes to crop simulation modelling and irrigation management, so much of this data would be used in Year 3 training and analysis. Since CIMH is in Barbados, data collection is done one station at a time across the year, particularly during the first half. CIMH already had a wide cover of data from Barbados, and therefore concentrated on filling gaps in the data.

Jamaica, Belize and Dominica were a bit more challenging with respect to location of data sources. So it was decided to dedicate more time to this rather than sending rescuers in without being sourced. That extra time proved to be very important. Slowly but surely important sources of data were revealed. During this time, the encouragement of the success of the data rescue effort in the other 7 states, and the fact that in many cases there was not enough dedicated time to rescue all data, CIMH pursued additional funding for a major rescue exercise of not only climatological data but also hydrological (including stream and river flow, lake and reservoir levels etc.) for all 16 of CIMH member states (including the 10 CAMI states). On gaining approval of the funding, the Project Coordinator then arranged for CIMH data collectors to go into Belize, Jamaica and Dominica in November 2011 since, as in the CAMI proposal two data entry clerks would be in place with this new project by December 2011 to enter any data not yet in CIMH data bases (this woud include the 3 outstanding CAMI countries. This data would then be ready for the 2012 training workshops, attachments and product development.

The delay did not hamper the country climate trends analysis too much as electronic sources were sent to us during that time. Each country has weather equipment at Meteorological Services and these were used for this exercise, as we wanted to identify whether or not trends in the country indicate the expected changes due to anthropogenic climate change. These can be done from data at any station. However, the other applications (pests and diseases and crop simulation modelling, and irrigation management) would require data from at least some agricultural areas.

Jamaica is a special case and needs much more attention well beyond CAMI. In 1992, a fire at the Meteorological Service destroyed the majority of its records.

Unfortunately, unlike the other CIMH member states that sent their data for back-up in CIMH data archives, Jamaica did not. Since then Jamaica was on a mission to recover its lost data through persons they would have sent data to. There was success in some cases but not in others, as in those days most other institutions concentrated on saving and using monthly data rather than daily and hourly data. Up to this very day only monthly data exist at the two main Met Service stations at Sangster and Norman Manley Airports for pre-1992 years. Most of the higher-resolution temporal data is post 1992. Focus had been and still is on bringing data from other stations outside of those owned by the Met Service. One such case is agricultural station Worthy Park. So as other stations were being located, paper data files for Worthy Park were scanned and emailed to CIMH as it made no sense to send in rescuers for one station. This station, along with the monthly data from the two Met Service stations (where applicable) were used in rainfall and temperature analyses. Despite this, there was some success in acquiring other stations and filling data for the Worthy Park station during the rescue there.

During the Stakeholder meeting in Belize early in Year 2, scientists from the World Wildlife Fund who attended formed an immediate relationship with CAMI through mutual interest in climate data collection and their application in diseases modelling. Discussions since that meeting have resulted in them assisting with data from their Automatic Weather Stations from Belize for the pests and diseases modelling.

This completed the rescue begun in year 1 and allows for adequate analysis and data and development of products and information that can aid in farmers making appropriate decisions and responses to weather and climate forecasts and other information in the short, medium and long terms, as mentioned in the logical framework.

Reports on these visits are attached at **Annex 7**.

Training Attachments
Attachment at University of Florence

The Project Coordinator along with two representatives from the Caribbean Agricultural Research and Development Institute (CARDI) attended a one week (26-30 September, 2011) training attachment to the University of Florence (UF), Italy to further their knowledge and skills in Weather and Climate Related Pests and Diseases Modelling.

Whilst at the UF, the three participants Mr. Anil Sinha and Mrs Rasheeda Hall-Hanson (CARDI) and Mr Adrian Trotman (CIMH), were under the tutelage of Prof. Simone Orlandini and Dr Francesca Natali. Prior to arrival of the three trainees, Prof. Orlandini and Dr Natali prepared preliminary models for Black Sigatoka (*Mycosphaerella fijiensis*) Citrus Psyllid (*Diaphorina citri*) and Whitefly (*Bemisia tabaci*) based on peer-reviewed literature, to be adjusted during the attachment.

The choices of these pests and diseases were made after national meetings with Dr. Orlandini and Mr. Sinha, in 8 of the countries and Mr. Trotman in the other two, that determined the crops of national priority and their most economically important pests.

In recognising that the CAMI did not have the time or capacity to model all economically important pests and diseases, a sample of some key regional ones were decided on – as indicated in the previous paragraph. Apart from this, these would illustrate the use of meteorological information in crop protection. A fourth disease, soyabean rust (*Phakopsora pachyrhizi*) was also decided on for modelling since an active research programme on this crop had already begun at the CARDI Belize unit and they were about to acquire an Automatic Weather Station – making it easy to perform the necessary model verification and validation and therefore be an effective illustrative example.

At the attachment the trainees were introduced to the three prepared excel-based models, indicating what went into them and the data needed. With runs from different Met Station data from different CAMI countries, the types of outputs from the models were seen. With the Caribbean experiences of the trainees, adjustments were made to the models during the attachment. Also, starting from a generic infection model, a soyabean model was developed during the attachment. There is need to continue to improve the models such that they would provide meaningful outputs for the Caribbean environment. A number of recommendations were made to achieve this. These are indicated below:

- There is the need to include climate data other than temperature (in particular water/moisture) in these models
- The need for daily and hourly data was stressed by the tutors Dr. Orlandini and Natali. Some of this was provided by or rescued from countries, but may not have as many as ten years in some cases. However, whatever can be acquired will be important on the validation of these model.
- Tutors suggested that, preferably, hourly climate data be made available for pathogens and daily climate data for pests models.
- Where there is no hourly data, estimates of data of minimum hourly rainfall in the fields should be found.
- It is necessary that climate data matches the timing of biological data
- In the case of Citrus Psyllid, the timing of new shoots which is known to be well correlated with rainfall, needs to be incorporated in that model. The use of crop simulation models would be an asset here. It would be very useful to incorporate such crops simulation models as DSSAT with the three other crops as well, providing information on their development.
- It would be an asset to use the developed models to provide seasonal outlooks of the pests and diseases development. It is suggested that ways be pursued to use seasonal climate forecasts in the future.
- The developed models can also be used in climate change assessments in the Caribbean.
- Probably the most important recommendation coming out of this and previous sessions was the need to verify the models in the field. There is the need to identify farmers or research institutions' fields to assist in the verification. Suggestion that there are 8 banana farmers in Belize that may be able to assist in verification of Black Sigatoka model and there are many others in traditional banana producing countries of the Windward Islands. The CARDI Belize should be used in the verification of the soyabean rust model, as they have already begun a research programme for the crop and were expecting to

acquire an Automatic Weather Station very soon. Other fields across the Caribbean can be identified for the verification process.

- The identification of fields for verification should begin as soon as possible and be near completion by the end of April to provide enough time for incorporation in Meteorological Services and readiness for the final Stakeholder Meeting just prior to the conclusion of the project.
- Model verification can also include hindcasting, where observed and recorded data on expression of diseases or pests in the field in past years are compared to simulations of the model that uses historic climate data from the same period.

Thanks to the Pests and Diseases National Seminars, initial preparation of models was possible. The development of the models continued during the training attachment and now there are four pests and diseases models that only now need to be validated with field data.

This would allow for the fulfilment of the expected result of having validated pests and diseases models that use weather and climate information, as outlined in the logical framework.

See **Annex 8** for the full report.

Agrometeorological Bulletins

In October 2011, CAMI produced its first regional agrometeorological bulletin to be disseminated to the regional agricultural community. This regional bulletin had three (3) main sections

1. Regional Climate Summary
2. National Weather and Climate Summaries
3. Climate outlook for the following three to six months.

The inaugural and subsequent bulletins were sent to contacts from the farmers' forums, Ministries of Agriculture, Meteorological Services and other entities.

Interestingly enough, one month prior to the release of the regional bulletin, The St. Vincent and the Grenadines Meteorological Service launched its monthly bulletin. During the same month as the launch of the regional bulletin Antigua and Barbuda launched its monthly bulletin.

The current focus of issuing monthly bulletins focuses on climate issues and impacts, but as presented during the publication workshop, there should also be some focus on appropriate meteorological bulletins, which would suggest a frequency more like every ten days. The Meteorological Service of Belize issues agrometeorological forecasts for four day periods, which existed long before CAMI. However there has been less input for this effort since that service's agrometeorologist retired. With the exposure from CAMI training it is anticipated that there would be renewed vigour in this effort.

As mentioned previously, the publications workshop training paved the way for the National Meteorological Services and CIMH to develop bulletins and other forms of information in a language that can be better understood by the farming and extension communities.

Other Workshops / Seminars attended by Project Manager

Presentations made on the CAMI Project

An invitation was sent to the CAMI project to be part of the Caribbean Week of Agriculture (CWA) to further promote and publicise the project. This was thought to be a very good opportunity as the Caribbean Week of Agriculture normally brings together regional policy makers (Ministers, Permanent Secretaries and Directors of Agriculture) in agriculture. Promotional material including posters, brochures, and the first CAMI Regional Agrometeorological Bulletin were displayed at the special Exhibition event of the CWA. Mrs Lisa Kirton-Reed, with assistance from staff of the Dominica Meteorological Service, conducted the exhibition on behalf of CAMI.

Whilst there, Mrs. Reed also attended the Climate Change and Water seminar hosted by CAMI project partner, the Caribbean Agricultural Research and Development Institute (CARDI) as a part of the CWA activities. At this particular seminar, there was also a CAMI poster presented.

2.2 Please list all contracts (works, supplies, services) above 5000€ awarded for the implementation of the action during the reporting period, giving for each contract the amount, the award procedure followed and the name of the contractor

Contracts over Euros 5000.00

There was one contract over Euros 5000.00. This was awarded to the Caribbean Council for Science and Technology (CCST) to carry out a mid-term evaluation of the CAMI project. Despite not being necessary for this action, since the total cost of the grant was below the Euros 750,000.00 for mandatory mid-term evaluation, it was thought as important so make sure, from an independent source that the CAMI project remains on course to fulfil what it was set out to.

There were three other applications, one of which was ineligible, since the applicant was from Brazil (not eligible under the contract rules). Of the two other eligible applications, one was out of Italy and deemed too high, as it was well over the initial budget proposed and the other, though very good and within budget was not deemed as suitable as the selected proposal by the CAMI partners. Also the very suitable application from the CCST was costed well below that of any of the other applications.

CCST chose Mr. Ian Ivey to carry out the consultation.

Year Three Action Plan													
	Semester 1						Semester 2						
Activity	Month 1	2	3	4	5	6	7	8	9	10	11	12	Implementing body
3rd Steering Committee and Stakeholder meeting	Planning and Preparation (began in latter Year 2)	Guyana											NMHS Guyana, CIMH
Farmers Forums					Planning by NMHSs and CIMH, preparation of material and venues and invitations of farmers			Belize Jamaica Barbados Guyana	Trinidad and Tobago Grenada St. Vincent		St. Lucia Antigua and Barbuda Dominica		NMHSs, CIMH
Crop Simulation Workshop	Planning and preparation		Held in Barbados Jan 9-14 2012										CIMH
Crop Simulation Attachment				Planning and preparation			University Of Georgia						CIMH
Agrometeorology And Irrigation Workshop				Planning and preparation			Held at CIMH						CIMH
4th Stg. Committee Meeting							Planning					Held in Jamaica in October 2012	NMHS, Jamaica CARDI, CIMH
Final Stakeholder Conference							Planning					Held in Jamaica in October 2012	NMHS Jamaica, CARDI, CIMH

Crop Simulation Analyses				1.Modelling some key crops identified by farmers in the farmers forums for response of yields to climate change and (ii) coupling with pests models											
Soil water balance and irrigation analyses				Preparation			Incorporating soil moisture information into agrometeorological bulletins								CIMH
Soil Water and Irrigation Attachment					Planning and Preparation			Attachment International Institution							CIMH
Tripartite and Pests and Diseases Meetings						Initiating Meetings With PS/Ministers of Agriculture and Meteorology									CIMH, NMHS
CAMI documentary DVD		Selection Of Production Company	Footage, interviews, production and delivery												CIMH, NMHS
Audit														Audit	CIMH
Publications in Journals	Caribbean climate trends and agriculture				ENSO and NAO relationships in the Caribbean			Pest and disease model relationships							CIMH/CARDI
Dissemination of Regional and National Bulletins for Agro-met	Production and dissemination of monthly bulletins														NMHS and CIMH

3.Partners and other Co-operation

a. 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 Meteorological partners of this action for many decades. The countries represented by National Meteorological and Hydrological Services (NMHS) in this Action are ten of sixteen member states of the Caribbean Meteorological Organisation (CMO), 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 was trained by CIMH. Also, CIMH is a (i) Regional Training Centre and (ii) Centre of Excellence in Satellite Meteorology of the World Meteorological Organization (WMO), and collaborates on many initiatives with WMO. Of the ten CAMI member states, only Grenada is not a member of WMO. These pre-existing relationships (and we can safely say, pre-existing partnerships) makes the pursuit of the actions in this project less arduous than it could be. So much so is the case, that training workshops held at CIMH with collaboration from WMO is nothing unusual to the majority of participants of the CAMI workshops during Year 2. WMO also financially supports training of CMO member state personnel. So CAMI comes as just another collaborative effort between these entities.

Working together on providing technical information for the Caribbean region in meteorology is nothing new between the meteorological partners. This makes the routine production of the CAMI Regional Agrometeorological Bulletin much more possible. The WMO assisted in developing the template for this bulletin and the putting together of the information is lead and edited by the CAMI Project Coordinator with contributions from all ten CAMI National Meteorological Services. This, as CIMH continues to encourage and assist them in developing their own national bulletins during year three. Encouraging is that by the end of Year2, two CAMI NMHS (St. Vincent and the Grenadines and Antigua and Barbuda) had begun producing and disseminating such bulletins for their agricultural communities.

As CIMH's agrometeorologist, the Project Coordinator had a well-established relationship with the Caribbean Agricultural Research and Development Institute (CARDI) partner, working with them on many regional projects and initiatives. In most recent years, global (and Caribbean) concerns over impacts of climate variability and change led to discussions in 2008 between CIMH, CARDI, WMO and the Technical Centre for Agriculture and Rural Cooperation (CTA, another European Union organisation) at a conference held in Oouagadougou, Burkino Faso. One of the outcomes of this discussion was the continued development of the proposal that led to this project – CAMI. CIMH is an integral partner CARDI's regional effort in climate variability and change adaptation in agriculture in the Caribbean. CAMI is seen as one of these adaptation approaches. It is no wonder that this CAMI

partner approaches its roles of co-planning CAMI activity, and being the regional leader in CAMI pests and diseases modelling efforts, both of which were important during Year 2.

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

The Farmers' Forums outlined the great cooperation between CIMH as coordinating institution and State Authorities in the CAMI countries, in particular the Ministries of Agriculture. For these forums, the Extension Services of the Ministries of Agriculture were relied upon, as the national partners - the National Meteorological Services, did not have the traditional contacts and connections with the farmers in the same ways. These Extension Services in all countries were responsible for contacting, inviting and, in many cases, transporting farmers to these forums (some of them at their own expense as they saw it as their regular duty to their farmers). In most cases, these Ministries offered their conference facilities free of cost. The joint planning of the forums led to a stronger relationship between project partners and Ministries of Agriculture as major stakeholders, which augers well for all future activity of the project and its sustainability beyond its completion. Since these forums these ministries have been hungry for further engagement, which is very encouraging. During year three these stakeholder ministries are expected to be integral in forming national committees that will help to realise the success and just as important, the sustainability of the results and outcomes of the CAMI project.

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

<u>Caribbean Farmers Network (CAFAN)</u>

The Caribbean Farmers Network (CAFAN) have been very supportive not only during Year 2 but from project inception. They recommended some of the farmers to attend farmers' forums in different countries, and in the case of Guyana and Trinidad and Tobago, were responsible, in collaborating with their Ministry of Agriculture extension services for gathering farmers. The CAFAN Technical Officer attended all workshops held in Barbados on behalf of CAFAN and played a major role in the recommendations in the Commnications Strategy meeting hosted by CAMI and funded by the Technical Centre for Cooperation in Agriculture and Rural Development (CTA). A mid-term evaluation conducted during the year, recommended that a tripartite committee comprising Meteorological and Extension Services and Farmers Cooperatives or Networks be set up to strengthen the activity of the project and sustain its activity at the national level. CAFAN had been recommended as one of the potential networks representing farmers. CAMI is

therefore anticipating an even greater role of this stakeholder network during Year 3.

World Wildlife Fund (WWF)

A Central American team from the World Wildlife Fund working in Belize at the time of the CAMI Stakeholder meeting there, was invited to that meeting since there was mutual interest in climate data collection in agricultural fields and more specifically, interest in developing disease forecasting tools. Since that meeting the WWF team has shared their data with the CAMI pests and diseases modelling team for use in the Belize portion of the activity.

Technical Centre for Agricultural and Rural Cooperation (CTA)

The Technical Centre for Agricultural and Rural Cooperation (CTA) is an ACP-EU institution working in the field of information for development. At a workshop organised by partner institution the Caribbean Agricultural Research and Development Institute as part of the Caribbean Week of Agriculture activities 2010, the CAMI Project Coordinator made a presentation on the project. It was there that the CTA communications representative, Mrs Oumy Ndiaye recommended that, apart from the use of bulletins and newsletters to disseminate the agrometeorological information, that an entire strategy for dissemination of this information be developed. At that meeting Mrs. Ndiaye promised to look into assisting the CAMI project in some way to begin this process. In April 2011, CTA sponsored a consultant to organise, manage and report on a half day meeting held along with a two-day CAMI workshop on Publications. CTA also sponsored two other Caribbean participants with experience in communicating to the farming community – Mr. Patrick Prendergast from the Caribbean Institute for Media and Communications of the University of the West Indies, Jamaica and Mr. Michael Als from Radio Toco in Trinidad and Tobago. This potential communications strategy was discussed at all farmers forums during year 2, and these discussions would be taken into account as the CAMI project coordinator and the CTA seek to build upon this half-day activity during 2012 to develop and begin implementing the strategy.

Caribbean Community Climate Change Centre (CCCCC)

Due to requests from participants of the CAMI workshop on rainfall (and temperature) data analysis for further training in this area to supplement what was offered during this workshop, the CCCCC in collaboration with the University of Reading (UR) Statistical Services Centre (the institution consulting on the CAMI training) collaborated to offer the Caribbean Statistics in Applied Climatology programme. CCCCC provided the funding (through its cooperation with the United Nations Institute for Training and Research, UNITAR) for this activity, whilst UR in collaboration with CIMH was responsible for the training and student facilitation. Other Caribbean Community (CARICOM) and Caribbean Meteorological Organization

(CMO) member states not partners of the CAMI project were also invited to take part in this training. Some agriculturists were also part of this training. During Year 2 the electronic part of the of the course (e-SIAC) was completed, with the prepared report on this course by UR stating that this course had the highest percentage of graduates of any e-SIAC course. CIMH and CCCCC are seeking further funding for the more advanced face to face course (f-SIAC) to take place in 2012.

Subcontractors

The subcontractor engaged during Year 2 was Dr. Simone Orlandini of the University of Florence, Italy. Dr. Simone along with the CARDI entomologist specialist conducted the pests and disease country seminars, and with colleague Dr. Francesca Natali, was the guidance during the attachment of CARDI and CIMH staff at the University of Florence. Dr. Simone has gone well beyond the call of his consultant duty to provide continued guidance post attachment.

Farming Community

Apart from the Caribbean Farmers' Network (CAFAN) mentioned earlier, engaging farmers as a whole, particularly at the farmers' forums was encouraging as at each forum, farmers looked forward to more interaction with CIMH and in particular their National Meteorological Services. This was to the point where NMHS reported increased telephone calls from farmers that attended the forums.

Relationship with Other non-Partner Organisations

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

e. 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?

The project office had developed a banner during the first year that is displayed at CAMI meetings. This banner has the logos of the EU, ACP and Science and Technology programmes at the top along with that of CIMH. Apart from the advertising banner being displayed at workshops and meetings, an electronic version of this is placed on the CAMI website (on all its pages), posters, brochures

and presentations made at CAMI meetings. At each organised CAMI meeting there is a presentation on the project itself which highlights this sponsorship role of the EU.

At various meetings during the year, the media was invited (though they did not show for all). In the Antigua forum there was news video and a radio interview, in Grenada and St. Vincent and the Grenadines their Government Information Services did features and in Guyana the print media.

Closer to the end of Year 2 a call for proposals was issued on the CIMH web site and across the CAMI countries for the development of a documentary/dvd during Year 3 that would highlight the importance of weather and climate information in farming and agriculture at large, and highlight the main activity and achievements of the project and all the key players, including the EU. These would be distributed amongst partners, stakeholders, and media networks across CAMI countries. This would ensure that the application of the science, successes of the project and partners and sponsors involved are recognised long after the end of the project.

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.

The CAMI Project has no objection to this report being published by the European Commission.

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