

Presentation of the funded projects in 2010 for the « Haiti Earthquake » FLASH call

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## FLASH call « Haiti Earthquake »

**YEAR 2010**

<b>Project title</b>	<b>EISHA – Evaluation of the Impact of the Earthquake in Haiti</b>
<b>Abstract</b>	<p>The project "Evaluation of the Impact of Earthquake in Haiti," aims to study and analyze the impact of the disaster on the living conditions of households. It studies the effects of the disaster on employment, income, access to public services (education, health ...) one year after the earthquake. This project does not aim to evaluate the direct costs of the earthquake, but rather to assess its consequences for the population. This project implements a new methodology that takes into account the realities on the ground. Using a survey on households conducted in 2007, it will consist primarily of a household panel. We can then measure and accurately analyze the evolution of household living conditions and the impact of the earthquake. A control group will be also set up in order to apply the techniques of impact evaluation, which will be adjusted because of the special situation of households after the disaster. A "tracking" survey will complement this scheme. Half of the households had to flee their homes, destroyed or not. We will search for these households using information from neighbours or administrative (including lists of displaced). Finally, a survey of displaced persons will complement the project with a particular focus on this population group. This scheme will of course be adapted to the realities of the ground. The objective is to achieve a representative sample of all households and have a component "panel". Specific modules will be added to the questionnaire to get subjective information on needs and aid (and compare the opinions and judgments of the population with the one of experts).</p>
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<b>ANR funding</b>	396 912 €

**Starting date and duration** December 2010 - 24 months

**Reference** ANR-10-HAIT-007

**Cluster label**

## FLASH call « Haiti Earthquake »

**YEAR 2010**

### Project title

**GEDEAH** – Decentralized management of waste and sanitation from urban and periurban zones in Haiti

### Abstract

The solid and liquid waste is, as everyone knows, an important vector of diseases and nuisances. According to a study of 1999, near a quarter of the deaths listed in Port-au-Prince are of unknown origin; we can think that the living conditions of the population, in particular the state of the environment, is one of the major causes. This situation results mainly from the quasi-non-existence of septic tanks and from management systems of the waste in the majority of the districts of the capital. The organic matter contained in this waste and effluents is the source of process of biodegradation leading to the production of biogas and leachate as well as to the proliferation of microorganisms for certain pathogenic; the impact on the environment and the public health is more and more put in evidence by the appearance of diseases and the degradation of the ground and aquatic ecosystems. The situation still deteriorated with the earthquake arisen on January 12th, 2010 on Port-au-Prince. This dramatic situation requires developing new models of management and treatment of solid and liquid waste adapted to the situation of poverty in which is the great majority of the population of the metropolitan region of Port-au-Prince. The centralized management of the waste in big cities of developing countries shows very often its limits. This project has for objective to develop a model of management decentralized and integrated by the waste and by the purification into Haitian urban and outer-urban zones, and to set up the modalities of its replication, with for objectives an optimization of the valuation material and energetics, a minimization of the nuisances and the sanitary and environmental impacts and the creation of resources and jobs. Beyond the technical aspects, it is also and especially the new mode of local and long-lasting management that it is necessary to set up. The economic, social, environmental aspects must be handled frontally, so requiring the implication and the interweaving of different disciplines. Within the framework of this project, the partners wish to lean on bases established by two research programs which

they developed in Republic of Haiti and so to strengthen, develop and perpetuate these orientations and the set up partnerships: the one concerns the implementation of long-lasting structures of collection, treatment and valuation material of household waste; other one concerns the energy valuation under the shape of biogas.

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GRESE  
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**ANR funding** 243 014 €

**Starting date and duration** July 2010 - 36 months

**Reference** ANR-10-HAITI-001

**Cluster label** AXELERA

## FLASH call « Haiti Earthquake »

**YEAR 2010**

### Project title

**KAL-HAITI** – Research database for risks management and sustainable reconstruction in Haiti

### Abstract

The earthquake that struck Haiti in January 2010 is amongst the most destructive disasters of recent years: more than 200 000 lives lost, tens of thousands injured, close to 2 million people made homeless, the entire country must be rebuilt. The response of the international community has been unprecedented. Over and above the emotion brought on by the terrible scenes in the aftermath of the earthquake, our focus must now turn to rebuilding the country. In addition, using the abundance of data available, this case must be studied with the aim of better understanding seismic hazard and vulnerability in this zone and elsewhere.

During the immediate response to the disaster, tens of satellite images, both optical and radar, covering various spatial resolutions were acquired by satellite operators, whether they are national space agencies or private companies. To these were added aerial photography and in situ measurements.

After photo-interpretation, these images were used by the civil protection agencies that sent teams to the scene. Too often limited to this « response » phase, this earth observation and in situ data should be available for use by relevant agencies involved throughout the disaster management cycle: from recovery, to mitigation, to preparedness.

A prerequisite for making all this data available (in situ measurements, images, maps, models, reports, statistical data) to users (decision makers for the reconstruction effort, scientists) must be that it is accessible in an easily exploitable form (georeferenced, corrected, validated and dated).

This project's principal aim is to produce and promote the use of a database of earth observation (remote sensing and in situ) and associated data concerning the Haiti earthquake, defined and used jointly by end users and scientists. The reference infrastructure that is proposed here, containing freely exploitable data, will provide an invaluable resource for research into developing methods of analysis for users involved in disaster management from pre-event preparedness to the return to normal after the event, but also during the reconstruction phase currently underway in Haiti.

This project is aligned with current activities in the partner organizations. These include the ISIS and KALIDEOS programmes which provides improved access for the science and applications community to SPOT imagery, preparation for the launch of Pleiades and CNES' participation and role as project manager for the Haiti disaster for the International Charter on Space and Major Disasters.

This database will be proposed as a contribution to the Global Earth Observation System of Systems (GEOSS) « Supersites » activity which has begun to bring together relevant data for scientific study of this event.

One of the characteristics of this project is the strong user involvement, whether they are involved in humanitarian aid (Red Cross), UN organization (UNITAR/UNOSAT) or specialists in building construction. It should also be noted that the « Satellite group » of the Environment Ministry is also participating in this project not only as a spokesperson for operational users, but also on behalf of science agencies within their remit that will exploit the database. Haiti will of course benefit directly from this project. A mirror database will be transferred to Haiti during the course of the project and assistance in exploiting this resource will be proposed with the aim of developing a regularly updated GIS.

Website: <http://kal-haiti.kalimsat.fr>

**Partners**

BRGM  
CETE/SO  
CNES  
SERTIT

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**ANR funding**

681 830 €

**Starting date and duration**

December 2010 - 48 months

**Reference**

ANR-10-HAIT-008

**Cluster label**

## FLASH call « Haiti Earthquake »

**YEAR 2010**

### Project title

**RECREAHVI** – Resilience and creative process in children and adolescents victims of natural disasters in Haiti

### Abstract

Among the various long term aspects of reconstruction of Haiti, the psychosocial dimension, concerning not only the social bonds but also the psychological dimension, the capacity to bounce back and create, is essential. It involves the ability to inhabit his body and his psyche before occupying the rebuilt constructions. Thus, this research contemplates the processes of resilience and the creative processes in children and young Haitians who survived the natural disasters in 2004 and 2008 in Gonaives (hurricane Jeanne, Hanna, Ike ...) and in January 2010 in Port-au Prince, Leogane, Jacmel and Petit-Goâve (earthquake of January 12). These natural disasters are considered here as potentially traumatic events which may reactivate other previous trauma. The linking of these phenomena, distant in time and geographical space, seems important as they resonate with the former pain and effort of Haitian people to recover from their dislocation. For beyond the event reality, we are interested in the psychic reality of the trauma. The reconstruction psychological dimension conditions all the others since any proposed sustainable reconstruction requires from the actors, mental and emotional availability to its finalization. We choose to focus primarily the adolescents under the age of 18 years because they are part of the population that will ensure the development of the country in future years. This fundamental clinical research articulates qualitative method and quantitative method. It covers a sample of 3000 individuals (in camps, schools, churches, or hospitals: 2000 in Port-au-Prince, Jacmel, Leogane and Petit-Goave and 1000 in Gonaives) of which 500 will participate at the clinical analysis. We pursue five key objectives: to analyze the process of symbolization and resilience of the Haitian people on the "long term", to identify a guardian of resilience and resiliency factors, to analyze the creative processes of children and adolescents, to identify and work their dreams of living in the future and to find new ideas for mental health care, educational, artistic and social devices.

**Partners** CRPPC/ULL2  
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**ANR funding** 580 840 €

**Starting date and duration** July 2010 - 48 months

**Reference** ANR-10-HAIT-002

**Cluster label**

## FLASH call « Haiti Earthquake »

**YEAR 2010**

### Project title

## **REPARH – Building back safer in Haiti (earthquakes / cyclones)**

### Abstract

The REparH project is developed in the post disaster context following the earthquake that severely struck Haiti on January 12, 2010. Traditional wooden houses, abandoned around the middle of the XXth Century, have much better withstand the earthquake and not killed. Thanks to this statement, shared by various authorities and organizations, as well as professionals and people, the wish has been expressed to take the opportunity of the proposed reconstruction programmes to re-establish national capacity on specific seismic resistant building cultures using local resources (timber frame, wattle-and-daub using palm tree elements, stone or earth masonry, etc.) to contribute to socio-economical (re-) development. In this perspective, the PADED platform with the support of GADRU (Rural Development Support Group) has launched a reconstruction programme of 5.000 houses in rural and peri-urban areas. To that end it has received a financial support of Misereor, due to their long standing collaboration, who has asked CRAterre for its technical and methodological expertise. The ReparH project is using this initiative as well others (e.g. PAPDA – Caritas France) to pursue its research objectives. REparH is gathering together CRAterre, the AECC research Unit of the School of Architecture of Grenoble, and the 3S-R research laboratory of the University Joseph Fourier in Grenoble. This research project is intended to analyze local building cultures and reconstruction stakeholders' strategies in Haiti in order to co-evaluate them to define working methodologies and establish useful recommendations for similar post-disaster situations or before. The expected results of this research is to document the "building cultures" approach for reconstruction and develop a decision making toll which integrate technical aspects (resistance to earthquakes and cyclones) and social aspects (living mode, organization of the production, know how, etc.). This is to be achieved through an iterative process based a cycle with several phases: "inventory and survey", "hypothesis", "modelling", "experimentations" (including prototypes), "evaluation and validation" (scientific and on-field), and "valorization" through thesis and other medium (conferences,

articles, presentations, etc.) to make the results available to concerned people and organizations.

A very important perspective is that of a partnership with the ENAM, *Ecole Normale d'Art et Metiers*, who has been given the mandate by the *Institut National de Formation Professionnelle Haïtien* to develop a strategy for the training of trainers for the building sector.

**Partners** AECC/ENSAG  
CRATERre  
L3SR

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**ANR funding** 569 435 €

**Starting date and duration** July 2010 - 42 months

**Reference** ANR-10-HAIT-003

**Cluster label**

## FLASH call « Haiti Earthquake »

**YEAR 2010**

<b>Project title</b>	<b>REV – Balances and forward-looking to reconstruct or establish the world literature listings official civil status registration, addressing and cadastre and academic papers (diplomas, titles,...)</b>
<b>Abstract</b>	<p>The identification and the recognition of the individuals in the modern societies of rights and written culture pass by the possession of documents: identity papers, diplomas and certificates testifying to a level of knowledge and knowing or experiment, documents of title, of or the importance of these recordings of State which are the systems of Marital status for the events of the private life of the individuals, of the existence of a land register like system of territorial inscription allowing to connect the individuals inhabitants and owners to it. Haiti had to engage a process of modernization of its civil status registration which presented however still many dysfunctions and gaps before the seism, in particular for and the uneven treatment birth registrations of the children according to their statute in filiation. The catastrophe has to make disappear part of existing in the offices from Marital status, including those set up by the National office of identification. Haiti also began to take part the effort of education and formation with Universities endeavouring to deliver titles making it possible their holders to take part in the international competition. Territorial inscriptions of the land register or addressing for their part, and in spite of the existence of a national authority (National office of the Land register) counted for their part only one weak part of the country. The seism undoubtedly started this universe of official documents much, if essential to the life of each one, the reconnaissance of its rights, but also necessary to plannings of State, management and the administration basis of sustainable development. However, it can be hypothesized that the effects of the disaster can not be analyzed solely in terms of losses, but he creates new situations requiring them to invent new solutions, where there was only trying to catch up and modernize . This project aims to explore, beyond the balance sheet, possible resources and inventions according to the three entries mentioned: Marital status, address and Cadastre, Education, Training.</p>
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<b>ANR funding</b>	118 408 €
<b>Starting date and duration</b>	July 2010 - 24 months
<b>Reference</b>	ANR-10-HAIT-004
<b>Cluster label</b>	

## FLASH call « Haiti Earthquake »

**YEAR 2010**

### Project title

**S3F – Development of a multiple-use (food, feed, fuel) sweet sorghum in Haiti**

### Abstract

After the terrible earthquake on last 12 January all has to be rebuilt. Boosting agriculture sector, already severely damaged by storms and hurricanes in 2009, is one of the priority of president of Haiti. Development of multi-purpose crops like sweet sorghum represents a good opportunity for farmers. This plant is able to combine a food (grain) and animal (leaves and bagass produced from juice extraction) with a bio-energy production (ethanol produced from sugars accumulated in stalks). Sweet sorghum responds to two major challenges for Haiti, (i) increasing food (grain) and feed (leaves and bagass) and (ii) produce alternative energy source (ethanol).

S3F for Haiti proposes to develop sweet sorghum processing sector in Haiti through:

1. rapid identification of varieties adapted to new environment from a pool of germplasm coming from other breeding programs or core collections and initiation of a breeding program to produce at longer term new material better adapted to Haiti
2. adaptation of cultural practices either for monoculture system or under association with pigeon pea which is already well appreciated by populations
3. adaptation of extraction processes from the existing knowledge and equipments in sugar cane sector and development of transformation of alcohol in gel for cooking fuel
4. transfer of all data to stakeholders through specific workshops on cultural practices, production of alcohol, use of leaves and bagass as forage, and production of alcohol gel while making the public aware of the using of this new energy source.

The development of this crop will impact at different levels. On a scientific point of view, a team from Haiti will be strengthened and will initiate a breeding program for sweet sorghum. At agriculture level, sweet sorghum will induce a diversification of farmers' productions and due to its low demand of water and nutriments will allow a development on under-cultivated pour soils. On economic level, sweet sorghum sector will create new jobs for harvesting, transporting, processing, commercializing new products and for produce new spirit stove adapted to gel. Finally, sweet sorghum is a more environmental friendly crop than sugar cane or maize and can produce alternative energy

source; its development will result in fine to a decrease of deforestation and/or fossil use.

To develop this project, Cirad will lean on a strong and dynamic local partnership with Chibas-Haiti Foundation, University of Quisqueya and the private company Agriterra.

Website: <http://s3f-haiti.cirad.fr/>

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**ANR funding** 396 240 €

**Starting date and duration** July 2010 - 48 months

**Reference** ANR-10-HAIT-005

**Cluster label**

## FLASH call « Haiti Earthquake »

**YEAR 2010**

### Project title

**SUTRA<sup>2</sup> – Monitoring and Treatment of extremity trauma for mass casualties in difficult contexts**

### Abstract

The earthquake of the 12th January 2010 in Haiti led to an overwhelming mass casualty situation; particularly of patients with trauma to their extremities. Amputees of all ages have occupied Haitian hospitals since the earthquake. The treatments which these patients received have raised a controversy about some of the amputations which occurred. Some medical authorities argue that exhaustive attempts at reconstructive surgery should be undertaken before an amputation occurs. The project which is envisaged proposes to: 1/ Collect the data necessary to evaluate the treatment of extremity trauma based on a large cohort with a longitudinal follow-up 2/ Discuss the methodologies which allows comparison of the different treatments delivered, and to detail the ethical and economic implications 3/ Promote an appropriate follow up of the Haitian earthquake victims based on the evaluation of the quality of care ALIMA (The Alliance for International Medical Action) is an international NGO. It aims to develop local capabilities and to carry out operational research in the health care field. Since the evening of the 12th January, in partnership with a Haitian clinic, ALIMA has been involved in the medical management of earthquake victims. With two operating theatres, specialists in orthopedic and plastic surgery; we have treated 1200 injured, carried out 780 operations and more than 2 500 health care consultations/treatments Since the beginning, we decided to put in place a system of follow-up for these patients over several months; and to participate in the advancement of the debate about the management of severe extremity trauma in difficult contexts. We are also providing care for a new cohort of patients who were treated in the first weeks by other emergency response teams, who have now for the most part left the country. This cohort will allow us to make a comparison between the different approaches to treatment. The proposed study aims to determine the most appropriate means of treatment for extremity trauma in difficult contexts with multiple constraints. The issues include local aspects such as the success of the reconstruction plan for Haiti, and those which relate to the fact that the experience can be used in the management of other post-catastrophe situations, and more broadly the treatment of

extremity trauma. For the local aspects, the future of Haiti is threatened by the psychological aspects of the life of Haitians after the earthquake, in particular those who were injured during the catastrophe. Precise data and a thorough and complete evaluation of the management of extremity trauma is necessary for Haitian society as a part of its collective reconstruction project. The issues surrounding the management of this psychological dimension are greater than the question of whether to undertake amputation or reconstructive surgery in Haiti. They encompass medical ethics in catastrophes, and more generally the position of quality of life in the considerations undertaken prior to a medical decision. Other matters include the management of health systems in contexts even more impoverished than Haiti. In summary, this evaluation of medical decision making covers a wide range of issues for the domains of ethics, the performance of a health system and the struggle against poverty.

**Partners** ALIMA  
LEM

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**ANR funding** 404 426 €

**Starting date and duration** July 2010 - 30 months

**Reference** ANR-10-HAIT-006

**Cluster label**