

Project of Reinforcing of the Capacities of Intervention of the Rural Health Stations in Senegal by the Solar Energy.

(PRECAPSES)

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1.contexte

Currently more than two billions of people through the world, live for the most in the rural environment and have recourse to the traditional fuels as woods, manures and the agricultural garbage to satisfy their needs with heating and cooking. The energetic crisis that rages in the world since now more than 20 years and characterized by the improvement of the oil price and the rarefaction of the fire wood contributed a lot to that situation.

This crisis that doesn't save any, nation any people, is again more felt in developing countries that belong for the most to the African continent. Most of these countries are classified among the poorest countries of the planet with at least a person on two to living with less than a dollar per day.

In these countries the, the situation of poverty is similar to the one of the electrification. The energy for more than 90% of the African, it is again wood, the organic garbage, the candle and the kerosene. The access to electricity and to its services as the lighting, the mechanization and the refrigeration, if it is not non-existent, is stagnant or in return behind because of the fall of the public service companies and the inability of the existing companies to assure a service to the rhythm of the increase of the population.

The use of the fuels and the fashions of production, of distribution and of consumption of the energy have some negative impacts on the environment at the local, regional and world level. In the world about two millions of premature deaths are attributable to

the effects on the health of the pollution due to the use of the traditional fuels for the heating, the lighting and to cooking.

The access to the sources of modern energy is recognized indeed like a previous condition to the economic and social development and of the same way it has been verified that the lack of access to the modern energy hinders the economic and social development

This link of energy and poverty has been reaffirmed in the time of the ninth session of the Commission for the Lasting Development in more (CDD9) of the United Nations in 2001, then in the time of the World Summit on the Lasting Development (WSLD) held in Johannesburg in 2002. The accent has been put on the character indispensable of the energetic services for the reduction of poverty, especially by an access increased to reliable and accessible energetic services.

In Senegal, as in the world and in Africa, several initiatives have been taken to find some solutions to the question of the access through the renewable energies.

However in spite of all these efforts and this obstruction as good at the international level as national for a development getting lasting results, didn't arrive again to the level discounted through the world in renewable energy favor, health and the struggle against poverty and more especially in Africa especially in Senegal. These efforts deserve to be sustained through national or even regional project.

II Justification

The population of Senegal is estimated to ten (10) millions of inhabitants with a rate of yearly increase of roughly 2,6%. The socioeconomic profile is characterized by a gross national product of 530 US Dollars by head that allows to classify it in the group of the less advanced countries of the world

Senegal is faced to two big energetic problems

- (1) to cover the demand of energy << commercial >>, it nearly depends entirely on imports of oil that nearly weigh quite heavy on the balance; heavier on the balance of the payments; net imports of oil absorb more than 50% of the returns of the exports.

- (2) then the surexploitation of the natural forests that provides to the country the biggest part of the energy that it consumes, provoke a fast deforestation that impoverishes the rural world more and more in resources: the wood of fire and the coal of wood become rarer and rarer and cost dearer and dearer.

However, the country possesses energetic substantial resources but exploited insufficiently, in the domains of the solar, energy of wind and hydraulic. The new technologies adapted to the local conditions can help to satisfy country of the energizing of the needs and to sit down better particularly the rural world in the 21st century.

In accordance with the objectives of the Millennium for the Development (OMD), Senegal elaborated a document of strategic reduction of poverty that articulates around the creation of wealth of the capacity backing and the promotion of the social services of basis, and of the improvement of the conditions of life of the vulnerable group.

On the eight objectives of the millennium ,three concern the reduction of the health(the reduction of the maternal mortality, the reduction of the infanto - juvenile mortality and the struggle against the VIH/SIDA, the malaria, the tuberculosis and other endemic illnesses).

It is proved necessary that, in consideration of the beneficial role that the synergy solar energy/health can play in the struggle against poverty in rural zone to put in œuvre a project of solar electrification of agriculture of the health stations.

The analysis of the distribution of electrified villages (according to the annexe)shows another facet of the electrification. The region of Dakar, although being represented weakly by its weak number of villages, is on top with 61,7% of electrified houses as Saint Louis which shelters 7% of villages with 18% electrified houses. The regions of Kolda and Tambacounda have the proportions of villages electrified weaker in relation to their weight.

The distribution of the rural electrification is little equitable in relation to the number of villages. The west zones of the country (Dakar, Louga, Saint Louis, Ziguinchor, Thies)are the most abundant ones in terms of percentage electrified villages . The regions of Kolda, Tambacounda, and Kaolack are least favored.

The strong interrelationship Energy-Health-Lasting development is a means that can allow the public opinion to become aware of the interest and the necessity to establish a new stimulant order susceptible to reverse a dramatic situation as well on the economic, social as ecological plan.

This renewable energy development policy comes to reinforce the setting pulled by the Letter of politics of development of the sector of the energy elaborated in1997(reactualized in 2003) and by the Law of orientation n° 98-29 of 1998 of reform in the under sector of electricity of that the principles of basis are among others:

- The creation of an agency dedicated exclusively to the rural electrification Senegalese Agency for the Rural Electrification(ASER) ;

- The consideration of the rural electrification as a means of the development of the rural zones;

- The implication of the private sector, of the NGOs, of the local collectivities in the rural electrification,;

- The recourse to the varied technical solutions and adapted to the demand (technological neutrality).

Otherwise, the Government of Senegal, after the different crises that it managed him , created a setting enough favourable and appealing in renewable energy favor:

- The n°81-22 of the law of June 25, 1981 that institutes some fiscal advantages in the domain of the use of the solar energy or eoline;

-The primatorial circulation n°10-220/PM/SGG/EC5 of December 21 1978 related to the influence in account of the solar variant in the public markets of energy ;

-The note n°0706/DGD/DERD/BE of the decision that carries the exoneration for the solar matter, the fiscal right and the tax on the added value(this decision has been abrogated with the TEC of the UEMOA);

-The creation in 1999 of a laboratory of test and of control of photovoltaic components;

-The development of a Main Plan of Rural Electrification by solar photovoltaic .

A private sector, of the GNOs, and of the associations of installers and dynamic up keepers(rural) are put to accompany and to push the Government progressively.

This voluntarist policy allowed to arrange a park of solar facilities that can be estimated today to more than 3 MWc for the photovoltaic(centrals, individual systems, communal systems, etc).

In the thermal trajectory, the main attempts undertaken concerning the water-heater, the solar drying, the solar cooking, the desalination of the brackish water or the water of sea.

These different realizations in the domain of the solar energy spectacle a politic will of the Senegalese Government to orient the solar energy toward the development considering the intersectorial ties that it has with agriculture, health, the hydraulics and education.

The range of the objectives of the DRSP and the OMD requires the present stimulating improvement of the service, especially in rural areas . Solving the problem of poverty in rural environment, is attacking its multiple aspects that are a deficient or desperate education, health worries little satisfactory, an insufficient or non-existent purification, a supply in non drinkable water, driving force that goes up to the human strength.

Unfortunately most stations of health in rural environment are not electrified. This situation is not without effect on the health of the populations and their poverty. Indeed, a station of health without electricity presents a certain number of inconveniences:

- Risk of elevated infantile and maternal mortality;
- Medical - Exams non deepen;
- Many of illnesses non discovered;
- Resort to methods of traditional wood lighting (fire, oil- lamp , candle);
- Risk of fire;
- Harmful gas - Emission
- Difficulty to motivate and to keep a staff of health qualifier;
- Insecurity;
- Difficulty of intervention for some services;
- Heaviness of the family loads (certain sick buy their systems of

lighting)

All these internal difficulties to the sector of health are accentuated by an unfavorable economic and social environment, characterized by factors of poverty, continuous demographic growth, non controlled urbanization, insufficient schooling and literacy , of weak rural electrification rate.

It is in this setting that the Government elaborated better the Document of Strategy of Reduction of Poverty(DSRP 2002) to take in account the poor populations mainly concerning health.

The Government also made its the objectives of the Millennium for the Development (OMD) three (03) of the eight (08) objectives are relative to health (the reduction of the maternal mortality, the reduction of the infant - juvenile mortality and the struggle against the VIH/SIDA, the malaria, the tuberculosis and other endemic illnesses).

The setting to disposition of energizing services in the rural health structures finds its foundation on the lessons learned in a certain number of projects of solar electrification of infrastructures sanitary .It is to reach the objectives quoted above ::

- Project of solar electrification of the station of health of Mount Rolland in 1980.This project demonstrated the technical photovoltaic system feasibility. Facilities functioned well but the upkeep and the maintenance have not been taken in account in the conception of the project
- Project of solar electrification of sanitary infrastructures with the Belgian in 1987 :08 stations of health (5 in Saint Louis and 3 in Tamba)have interested this program. In addition to the lighting it was also about nourishing some solar refrigerators for the conservation of the vaccines and other medicines. The non taking in account of a post-sale service didn't permit the refrigerators to have a correct working during the post - project phase..
- Medical program Faculty - AFVP/Region of Tambacounda :6 stations of health are equipped of solar refrigerators and portable solar lamps The master . of work was the ministry of health supported technically there by CERER.II had a solid accompaniment shutter to the formation of the health staff charged of the management of the system on the upkeep and the solar facilities maintenance.
- Regional solar program(RSP) :this program of all countries members of the CILSS included a shutter solar electrification of sanitary infrastructures. For Senegal 36 stations of health have been equipped in refrigerators, in system of lighting in the region of Saint Louis. In this program had a contract total guaranteed of 5 years paid by the users and insured by the suppliers ;the users have been implied in financing while giving an initial contribution. This maintenance contract with a private society , S3E,was concluded. A certain number of accompaniment measures has been taken for better motivated the staff of health(training; acquirement of individual system to soft conditions).
- Project of solar electrification of the clinic of the religious sisters of Djilass in the department of Fatick. This clinic was electrified(lighting and alimentation of some devices)in the PSAES. The upkeep and the maintenance of facilities didn't pose a problem because an association of villagers in the zone had the responsibility of it.
- APSPCS program in 1990 :in total about forty Catholic clinics in the regions of Ziguinchor ,Fatick and Kaolack interested this project that was an typical example of success. Several partners collaborated in a perfect way:
 - APSPCS is the master of work
 - SEMIS office of survey private intervening party in the solar, assures the restraint of oeuvre;
 - Buhan&Tèissère: assure the supplying and the installation of equipment continuation a call of offers;
 - -ASPSPC,Ministère of the Health ,WHO, Ministry of the energy ,FONDEM,SEMIS,B&T :constitute the committee of piloting.

A post-sale service with the supplier has been concluded and an okay protocol between the main taking parts of which a technician in maintenance installed in the zone of the project has been put in place.

The recipients participated in the initial investment in height of 5% .A fund of maintenance taking in account the upkeep, the maintenance and the renewal of facilities has been put in place. This fund was nourished in part by the sale of system energy rented to individuals by APSPCS.

Strong of the lessons pulled from these different national experiences concerning solar electrification of sanitary infrastructures our country understood the interest that presents the synergy solar energy /health and so elaborated a national strategy of solar electrification of the sanitary infrastructures .

It is in this optic of the setting in work of this strategy that **the Project Backing of the Capacities of intervention of the Rural Health Stations in Senegal by the solar energy** is proposed. It will be about equipping in photovoltaic systems and in solar water-heater hundred (100)sanitary infrastructures : 50 stations of health (20 complete stations of health and 30incomplete stations of health)and 50 huts of health.

The advantages bound to such a project are multiple:

- Reinforced security during the night;
- Improvement of the access to cares of quality;
- Education for health;
- Improvement of the vulnerable group access to services of quality;
- Reinforcement of the prevention and development of the communication for the change of behavior;
- Improvement of the availability, the quality and the human resource performance in health;
- Improvement of the institutional capacities of the sector;
- Availability of the medicines;
- Improvement of the service quality.

The option of the solar energy technology for this project also justifies itself by:

- An important solar potential (5,8KWh/m2/an with 3000 hours of sun-shine per year);
- A weak electrification rate because of the cost of the conventional solutions of rural electrification;
- An important number of sanitary infrastructures in non electrified rural environment and of which the isolation, the scattering and the energizing needs are adapted to the solar energy. In more ,these infrastructures are all distant of the conventional electric distribution network and their electrification is not foreseen to short or middle terms;
- A health in recurrent rural environment for the vulnerable groups (children, women, 3rd age);
- An experience succeeded in matter desolarisation of health infrastructures in rural environment.

A lot of studies showed that the rural sanitary structures functioning to the solar energy present a real improvement of the sanitary conditions of the populations . by the quality of the cares, the limitation of the risks bound to the childbirth, It confers an environment where the populations in good shape are therefore able to give themselves to productive activities as to non generating activities of revenues(education, literacy) .So, the introduction of solar energizing equipment to the sanitary infrastructure level can contribute to reduce poverty.

In sum the sector of the solar energy can be an important lever of promotion and development of health in rural environment in a perspective of struggle against poverty and lasting development.

III. OBJECTIVES OF THE PROJECT

- General objective : promotion of the solar energy by health for the struggle against poverty.

Specific - Objective:

- to Valorise a local energizing resource, the solar energy,;
- to improve the health of the farming populations;
- to Contribute to the national policy of struggle against poverty

IV. Results waited

- the part of the solar energy in the energizing balance of Senegal is increased;
- 40 stations of health are electrified;
- the health of the rural populations is improved;
- poverty is reduced

V. Description of the project

The project consists of the equipment in solar energy of 50 stations of health and 150cases of health situated in isolated rural zone, far from the network of the SENELEC. It will be about in the sites chosen to electrify the stations of health and the huts of health polarized by the latter (in average 1 station of health for 3 huts of health).

The equipment in solar energy will carry on:

A photovoltaic system of Water-closets for the lighting and the supply of some devices functioning to the électricité(réfrigération, sterilizer, fan, ,etc television,

A system of solar water-heater mark thermos siphon(balloon and copter separated) of 120 liters intended to the personnel of health and malades(femmes and babies).

The station of health (the whole clinic +maternity home)functions the workdays, and can be solicited in case of emergency, of day as night(the rural maternities are solicited naturally of night for the childbirths) .It is composed of a building of several rooms:

.1 clinic understanding consisting of: ICP office, room of injection and bandagings, local of pharmacy, room of observation, store area of waiting/toilets ,.

.1 rural maternity home consisting of : room of consultation, guardroom, delivery room, room in succession of layers, toilets.

.1 ICP lodging consisting of :living, 2 rooms ,kitchen, toilets.

.1 lodging of midwife of 4 main rooms identical to the one of the ICP.

Let's note that the stations of health amounting solely in clinic exist.

The functional sanitary infrastructure organization in rural environment in Senegal presents itself the following manner:

Sanitary .district, that corresponds more or less to the departmental administrative carving;

.le station of health that is connected to a sanitary district;

.la the hut of health that is connected to a station of health.

VI. Assessment of the needs in energy of a health station

The needs in energy of a health station can be classified in 4 categories:

Needs in lighting:

- .the assistance to the childbirths particularly at night;
- .the medical acts;
- .the welcome of the patients kept in observation;
- .the holdings of meeting in the setting of the sanitary education ;
- .the administrative tasks of the ICP and of the health committee.

Needs in heat:

- .medical instruments sterilisation;
- . heating of the water(childbirths, baths)

Needs in cold weather:

- .for the conservation of the medicines, serums and vaccines.

Needs in running electric:

- .devices of laboratoires (microscope, centrifugeuse,etc...);
- Audiovisual devices used in the setting of the animation and the sanitary education (TV-video, spots slides, sound);
- . supply in drinking water by pumping from a well or a boring;
- . sterilisation of the medical instruments(poupinel);
- .fan;
- .vacuum cleaner for cluttered born child.

Quantitative assessment of the needs

The photovoltaic solar energy providing electricity, it is about proceeding to a quantitative assessment of the necessary electric energy " to answer the previously identified needs.

This assessment must be led with a preoccupation of recurrent load minimization misled on the budgets of sanitary infrastructure working; 3 factors condition the needs directly in energy:

- .the number of points of consumption: lamps, devices, etc....
- .the power called by every point of consumption;
- .the length of use on every point of consumption

The number of points of consumption depends mainly on the configuration of the buildings and the sanitary infrastructure equipment level; practically it is the number of points of lighting that constitutes the main variable at this level.

The named power depends on the type of device used :it is on the one hand very important at this level to resort to devices to high output, and therefore weak energizing consumption, on the other hand to adapt the powers to the real needs of use. It will have a direct impact on the investment and the recurrent loads.

The length of use of every device is in the practice the most delicate factor to define because it depends on operational parameters that are not a priori known :for example, how will evolve the real activity of the infrastructure during the night :(number childbirths at night) in account of the improvement of the welcome conditions. In order to value the needs in energy for the stations of health one considers the scripts - types of solar photovoltaic equipment use.

Two strong constraints appear in the present conditions of availability in energy: the lighting and the electric current for the small equipments.

.the lamp of oil or the torchlight lamp provides a lighting of very insufficient quality for the medical act exercise as the childbirths at night, and so contributes to increase the risks very distinctly for the users ;

.the use of electro gene groups is practically non-existent, because of its cost and the impossibility to assure a normal maintenance.

Gas often provides a technical solution satisfactory: for the medical refrigeration, the WHO judges it preferable to the solar as soon as provision in gas is assured and that the cost of gas is lower than 1,5US \$by 240hours of work. In Senegal the gas in bottle of 2,75kgs or 6 kgs is inexpensive and the criteria of cost is reached easily; otherwise gas is distributed relatively well along the road networks. Some constraints are however to be noted:

. the availability of gas is very uncertain as soon as one moves away of the networks road ;in the sites particularly enclosed, provision in gas can become very problematic in season of rains;

.si in case of shortage of gas, emergency solutions can be found for the sterilization (wood, coal), it is not the same way for the lighting and the cold weather. The lighting to gas is cost to the use of the frequent change of the muffs, glasses, etc.. The assessment takes the following aspects:

For the part clinic:

.welcome and cares (cares of emergencies exercised at night). The patient is considered like remaining in observation in the station of health for the night;

.use of electricity for the ordinary work of the health station: work of office of the ICP, working of devices (microscope, spotlight diapos, provision in water if a branching to the network of water distribution is impossible.

With the hypotheses of activities considered the needs in electric energy of a health station are the order of xxxWh/day, distributing themselves as follows:

For the rural maternity home:

The needs in energy of a health station are valued from the script of activities according to:

. the welcome and childbirth exercised at night at a frequency of 10 times per month, either one night on 3;

. the mother having given birth is considered like remaining in observation in the station of health for at least 2 nights.

With the considered hypotheses the needs in electric energy of a rural maternity hospital are the order of xxxWh/jour.

For the lodging of the medical staff

The electrification of the lodgings of the medical staff is considered like a efficient means of revalorization and incentive of the function of the health agents in rural environment.

The needs in energy are valued while considering the lodgings foreseen in the new norms of constructions of the health stations and are valued to xxxWh/day.

.the lighting of the main rooms of the lodging;

.the use of the radio - cassettes and televisions.

Description of the system proposed

In summary, the systems of electric supply and solar heating proposed are described in appendices.

VII. Localization of the project

The project enrolling in the promotion of the solar energy for the struggle against poverty by the improvement of health will be localized in the regions where poverty is louder. One will hold as account of the zones weakly electrified, of geographical concentration but also of the process of reinforcing peace in the natural region of the Casamance. So the regions of Kolda, Ziguinchor and Tambacounda.

VIII. Setting in œuvre

The present project will be put in œuvre as respecting the leading principles followed:

.the participative partnership while implying the set of the responsible actors in the domain of the energy, of the rural electrification, of health, the local collectivities and the recipients to the local, regional, national level. It will permit of assuring a transverse animation to facilitate the mobilization and the responsabilisation of all;

.the decentralization that is today a strategy of farming development because permitting to create the optimal conditions of democratic involvement, concentration and local collectivity responsabilisation in the conception, the setting in œuvre, the follow-up and the relative strategy assessment to the project;

.the good public business management what will oblige every actor to be responsible in front of the collectivity on his actions in the realization of the project.

So it make it efficient, the following institutional setting of setting in work is proposed:

.the cell of execution of the project that will be directed by a coordinator designated in charge by the ministry of the energy. This coordinator will be assisted by a helper who will be a staff of the health ministry and the financial backer staff.

The missions of the execution cell are:

- .to assure the technical secretariat of the piloting committee;
- .to diffuse the relative information to the project to the different actors in order to allow them to have some useful data to the decision making ;
- .to assure the synergy between the project and the other programs in the zone and participate to the meetings of sharings, reflection and experiences with the other actors;
- .to prepare the meetings, to inform , to consult the members, to write and to distribute the reports;
- .to assure the follow-up - assessment;
- .to prepare the reports on the state of the project.

The committee of piloting will be composed of the following services:

- .to attend to the setting in œuvre of the set of the actions kept in the project;
- .to organize the necessary dialogues to assure an efficient involvement of each of the actors, each in his domain of expertise;
- .to assure the follow-up - assessment of the project;
- .to assure a dialogue with the other structures and the other local programs in order to create a synergy.

●IX-Cost

We consider three cases in this project:

			eradication of the poverty
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XI-Analysis of the viability of the project

It is based on the following principles

.Participation of the actors

- Application worded by the local collectivities, the running committees of the health community infrastructures;
- Users, running committees must get involved and express their point of view at all the steps of the project, with the possible support of external partners;
- 5% monetary contribution to the initial investment of beneficiaries.

.Technical viability

- Recourse to systems and components technically proven in the Senegalese context;
- Suppliers and providers of services endowed with solid references in Senegal, able to assure the installation, the putting in service and the after-sales services;
- Contractualizing relationships between the supplier and the customer, from a precise schedule of conditions;
- Operational infrastructures

.Financial viability

- Rigorous evaluation of the needs in energy in order to optimize the proposition and the relationship cost/done service.
- Contribution of the State and the beneficiaries(health committee, rural counsel, polarized villages)to the initial investment;
- Reduction of the costs of after-sales service in setting down to work several installations concentrated on the same geographic zone;
- Recurrent charges of the solar equipments integrated in the functioning budgets of the infrastructures of the rural counsel and the health committee. In case of need the villages served by the health establishment can be solicited for a financial contribution.

.Organizational viability

- Mastery of work of the program assured by the local collectivities;
- Running of the solar equipments assured by the running committees, the follow through of these equipments in the device of existing monitoring;
- Maintenance and repairing or even exploitation assured by the private sector through contracts of services;
- However, from a purely organizational point of view it would be very important that the operator or the transitory administrative relies on the local collectivity(the health running committee)for the recovery of the dues related to the payment of the furnished energetic service.

This model of running would permit in terms to assure the renewing of the installations or their replacement by a connection to the network LT if only the evolution of the SENELEC network allows it in the future.

XI-Management – Upkeep-Maintenance

A contract of after-services will be established between the concerned health station committee and either the supplier of the solar equipments or either with a structure of

upkeep and maintenance, preferably exercising in the area of the project for the management of the equipments(upkeep, maintenance and renewing of the equipments)
This is conform to the concept of the partnership Public/Private defined by the Senegalese Government.

The strategy of intervention of the SARE in relation to its program of rural electrification. This option implies that the technical and commercial management is given private operator(either a franchise holder or transitory administrative).It constitutes a guarantee enabling the assurance of a technical, economical viability of the project.

XII-Impacts

- improvement of the frequenting of the health structures by children and women;
- increase of the adequate and effective cover in CPN, assisted childbirths, antenatal consultations and contraceptive prevalence;
- increase of the vicinal cover among as of the setting of the VEP;
- improvement of the quality of the offered services at the health stations;
- decrease of the specific mortality rate in the health structures;
- offer of services more diversified a the health stations;
- actual development of the work at the health station by its agents(agreement to be appointed to the health stations);
- availability of materials which requires one of the most increased competences of health agents(a supplementary factor of motivation).

XIII-follow up evaluation

Indicators of impact

Results	Sectors	Indicators
The part of the solar energy in the energetic assessment in Senegal is increased	Energy	Soar energy rate in the energy assessment in Senegal
Xx health stations are electrified	Health	Number of electrified health stations
Rural people health is improved	Health	Mortality rate(maternal, infantile,etc.)
Reduced poverty	Economy and society	increase rate a means of productivity in the project zone

XIV-Risks

We indicate in the chart below the risks incurred by the project in the measures preconized for the raising or the minimisation of these risks.

Types	Risks	Measure of raising or of minimisation
Financing	Interruption of financing by the backer	The backer must inform on time the beneficiaries of any possible interruption of the financing so that another alternative can be found.

Financing	Insufficiency of the granted financing required to the State.	The Government must inform on time the beneficiaries of any possible interruption of the financing so that another alternative can be found.
Financing	The beneficiaries incapacity to fulfil their financial contribution.	The beneficiaries must inform on time the beneficiaries of any possible interruption of the financing so that another alternative can be found.
Getting in work	Slowness of the mobilisation and the payment of the financing of the Government, of the beneficiaries and of the backer. The users difficulties to take in charge the running amount of the equipments.	The chairman of the piloting committee and the coordinator of the project must be in permanent contact with the State, the users and the backer so as to anticipate and to solve the administrative and economical questions related to the mobilisation and to the payments.
Equipment(material, installations, upkeep, maintenance)	Acquisition of inefficient material, installations not correctly done, unfunctional after-sales service.	Attending to have a good schedule of conditions with well defined technical specifications and attending to respect them.

XV-Durability

The durability of the project depends greatly on the beneficiaries capacity(health stations management committees, local collectives) to create and reinforce the actions and the measures of getting in charge the management