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CASE STUDY

Sub-Saharan Africa • Senegal & Mali

Pésinet: A Health Care Initiative for the Reduction of Infant Mortality

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Sector • Health & ICT
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Summary

Pésinet was devised in 2002 by Brussels-based Afrique Initiatives as an early warning method for monitoring the health conditions of children from low-income families. The concept is simple: mothers subscribe to Pésinet's services for a nominal fee, and in return a local Pésinet representative weighs her children twice a week. Results are communicated through ICTs to a local doctor, who reviews the weight chart and requests a visit by the mother and child if the weight readings are anomalously low and it is suspected that some medical treatment might be required. Originally implemented in Saint Louis, Senegal, the project failed to achieve the financial sustainability that was necessary to ensure its durability. However, the lessons learned from it and the implementation of innovative solutions – including strategic partnerships, as well as technical and financial improvements – enabled Pésinet to be successfully re-launched in Mali in 2007 to benefit hundreds of children.

The Need for Health Services in West Africa

The need for health services is a central problem for poor people in West Africa. Malaria, dire living conditions, low incomes (less than one dollar a day in rural areas), illiteracy, dense slums, poor sanitation and lack of adequate water supply infrastructures are ongoing challenges faced by these populations. From 2002 to 2005, Senegal was the first theater of operations for Pésinet. After the termination of the Senegalese experience and in consultation with its partners, Pésinet is being redeployed in neighbouring Mali based on the lessons learnt from Senegal, as both countries present similar needs and challenges.

SENEGAL

In Senegal, almost 54 percent of the population lives below the poverty line[1] and it is estimated that almost nine percent of the Senegalese population is infected by malaria[2]. In 2001, 23 percent of children suffered from underweight[3] and the mortality rate for children under five years old was around 118.7 per 1,000[4].

Since 1960, Senegal has tried to implement health care services for its citizens but with poor results. There are five main hospitals in the country, all located in the capital city of Dakar. The training of the medical staff is completed at the University of Dakar and several small health care training units across the country. The hospitals are facing huge financial and material challenges, which lead to diverse dysfunctions. The low salaries of medical staff prompt them to open private health clinics. People from the lowest strata of society face a major accessibility problem. Public health facilities are understaffed, under-funded and under-resourced, and private clinics can be prohibitively expensive.

[1] Source: UN Millennium Project, 2001
[2] Global Fund, 2004
[3] ibid.
[4] World Bank, 2005

Saint Louis, Senegal

Each of the country's ten regions has a regional hospital, but none of them has qualified specialists to take care of the sick who have to go to Dakar. After the independence of Senegal in 1960, the former colonial capital city of Saint Louis drifted into a state of slow decline and faced a number of social and economic issues. The geographic position of Saint-Louis (on an island in the Senegal river) makes the region vulnerable to flooding and many kinds of water-borne diseases.

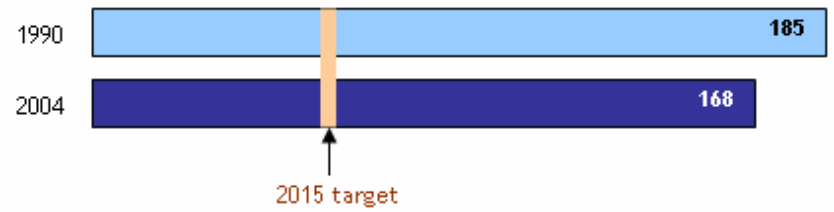
MALI

In Mali, health indicators describe an even worse situation: 73 percent of the population lives below US$1 a day, 43 percent of children are underweight[5] and the infant mortality rate is around 218 per thousand[6].

The Malian population is faced with numerous health concerns while having limited access to modern care. There are limited numbers of trained doctors and nurses and in many areas facilities are isolated (40 percent of the population lives more than 15 kilometres from a health facility)[7]. Efforts to combat HIV/AIDS and other diseases have been put in place by the government and donor agencies, but the range and depth of the integrated and self-reinforcing problems in the economic, health, social and education spheres make solving any one problem extremely difficult.

Both Senegal and Mali, and Sub-Saharan Africa as a whole, therefore need increased support in order to achieve the fourth Millennium Development Goal (MDG), which aims at reducing the under-five mortality rate by two thirds between 1990 and 2015 (see Figure 1, below).

Figure 1: Under-five mortality rate per 1,000 live births, Sub-Saharan Africa[8]



[5] Human Development Report, 2000
[6] World Bank, 2005
[7] Source: Dan Gerber, RTI International
[8] Source: MDGs Report 2006

Afrique Initiatives & the Birth of Pésinet

Afrique Initiatives is a for-profit company created in 1988 and headed by former French Prime Minister Michel Rocard. It is headquartered in Brussels, with a second office in Paris. The company's focus is investment in small and medium-sized African businesses in order to promote sustainable enterprise and private sector development and *"provide a more comfortable life to all Africans."* Afrique Initiatives has five main focus areas: education and training, nutrition, health, water/rural energy, and information technologies (IT). Pésinet belongs to both the health and IT categories. In 2006, Afrique Initiatives became an investors' club, thus allowing all of its shareholders (Bolloré, Total, Veolia, and CFAO) to directly participate in development projects in Africa, as part of the Social Responsible Investment (SRI)[9].

Pésinet grew out of Afrique Initiative's search for project ideas in Senegal. The concept relies upon three observations made at the local level:

- The major reason for the under-five mortality, as identified by a local hospital and pediatrician, is the lack of medical attention for children and the late diagnoses that result from limited access to healthcare. François Jay, Afrique Initiatives' former CEO, recounts that some children had died from gastro-enteritis after being brought to the hospital too late by their mothers, who identified the symptoms as a consequence of teething. This lack of medical attention is mainly due to high costs, which is, in itself, a result of families that are located too far away from healthcare facilities.
- A pediatrician from the outskirts of Dakar explained that he would always start by weighing the children, as the weight evolution was a major indicator of a child's health condition.
- Several pediatricians argued that, even in the very short run, a lost of weight in a child during a short period of time necessarily revealed pathology.

As a result, Pésinet was created in 2002 as an early warning method for monitoring the health conditions of children less than five years old in low-income families, a method that enables the treatment of diseases such as malaria and measles at their earliest stages. Originally, Pésinet was a non-profit entity that was not intended to be self-sustainable but funded by Afrique Initiatives in a first stage, and by external sources in a second stage. Afrique Initiatives was thus the main source of funding and the ultimate decision-maker for Pésinet. Pierre Carpentier and François Jay were Afrique Initiatives' project supervisors and the primary contacts for Pésinet's managers. Since then, Pésinet has been redesigned to achieve self-sustainability and is currently run by a team of eight people.

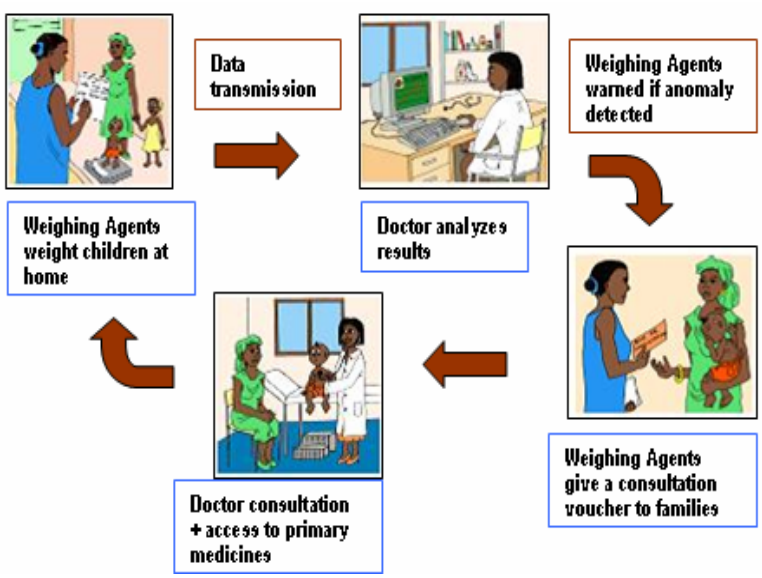
[9] Socially responsible investing describes an investment strategy which combines the intentions to maximize both financial return and social good.

Overview of Pésinet

HOW IT WORKS[10]

The Pésinet concept is relatively simple: mothers subscribe to Pésinet's service for a nominal fee, and in return a local Pésinet representative weighs her children twice a week. This frequency is considered by specialists as a relatively high performance. Results are communicated electronically to one of the local doctors. The doctor reviews the weight chart and requests a visit by the mother and child if the weight readings are anomalously low and if medical treatment might be required (see Figure 2). One doctor can cover the care of approximately 2,000 children.

Figure 2: Pésinet's mechanism[11]



The cost of the visit is covered by the subscription fees. In the case of Pésinet Mali, these also include access to medicines. The key element at the basis of Pésinet's services is rapidity: the system enables children to be weighed on one day and consulted by the doctor the day after if needed. Therefore, only ICTs could enable this type of solution, which addressed that challenge efficiently and at a reasonable cost. Affordability is also a key element, because the average income of the families that benefit from Pésinet's services is around 50,000 – 60,000 CFA (US$105-125) per month, or approximately US$4 per day.

[10] Comprehensive details on the background and business model of Pésinet are documented in *What Works: Afrique Initiatives Attempts at Combining Social Purpose and Sustainable Business*. World Resources Institute, August 2003.

[11] Source: Pésinet website <www.pesinet.org>

PÉSINET IN SAINT LOUIS, SENEGAL

In Saint Louis, which counts 180,000 inhabitants, about 20 percent of the children are under the age of five. The remoteness of people in the Saint Louis area (240 kilometres north of Dakar) and the lack of public transportation increase the death toll of vulnerable groups.

Map of Senegal

When Pésinet operated there, from 2002 to 2005, over 1,800 children were being weighed about eight times a month. The weighing agents used to go from door-to-door, and registration was done through enquiries and from collected data (deliveries, conditions of deliveries, etc.). Each child was given a file. After each weighing session, the agents took the collected data and inputted it into the main Pésinet database. Then the doctors would go through all the information (the medical history of the child, his or her age, weight, etc.) to see whether their weight trend required a visit.

Originally, the weighing was done by students who directly recorded the results into laptop computers, and the doctors were employees from public hospitals. But the difficulty in transporting electronic equipment, the high turnover of students, which hampered strong relationships with the local community, and the lack of time availability of public doctors, led to Pésinet replacing the laptops by paper charts, the students by women living in the target districts and the public doctors by private ones.

At its inception, there were just four to five people running Pésinet. The General Manager was Sokhna Gueye, assisted by Mrs Awa Gueye. Mrs Gueye was the true backbone of the organization. She was the accountant, the human resources manager, and the overall coordinator of the organization. Lamine Bousso and Fode Diallo were the computer specialists of Pésinet. They helped train the weighing agents in basic computer skills like word processing so they could enter in the children's weights that they recorded as they made their rounds. Beside those four people, Pésinet was working with two medical doctors (Dr. Masser Dioum and Dr. Madior Diagne), and 16 weighing agents.

PÉSINET IN COURA, MALI

Map of Mali

Pésinet was re-launched in Mali in June 2007 as a pilot project. Mali has been selected by Pésinet's partners – Alcatel-Lucent and Orange – because they were already settled in the country. Pésinet is being deployed in Coura, the belt neighborhoods of the capital city Bamako, with the objective of monitoring 1,000 children by the end of 2007. By August 2007, the service counted 400 children, three weighting agents and one doctor.

Children are weighed once a week at home (twice a week for children under one) by local women living in the community, who also register symptoms such as fever, diarrhea and vomiting. The women then transmit the data to the doctors via SMS. These "Pésinet ladies" convey a strong feeling of ownership for the project among the local community.

EARLY SUCCESSES

When it was first launched in 2002, the Pésinet initiative was actually breaking new ground, with its preventive approach and its use of information technology (computers, e-mail and databases). It quickly gained esteem: the project was presented at the Global Digital Divide Initiative (World Economic Forum, 2002), at the World Summit on Information Society (Geneva, 2003), and in many other forums.

In Senegal, the weighing services resulted in approximately 30 consultations per week for 1,000 children, and in Mali the average is so far around 20 consultations per week for 400 children. From 2002 to 2005 an estimated 2,000 children benefited from Pésinet, i.e. approximately ten percent of its target market of children, and the infant mortality rate in Saint Louis fell from 120 to 8 per thousand at that time[12].

At the social level, Pésinet is very visible in the community and is part of the life of low-income communities. The staff used to throw small parties to better sensitize the local populations on issues such as diarrhoea, cholera and other health issues. In Senegal, the topic was usually introduced by a doctor who was tying to get the whole community involved. In the beginning, the doctors went to the elementary schools and held their consultations with mothers and their babies there. Pésinet then kept promoting its services through word of mouth and District Associations.

[12] Chibomba, Kevin. "Mobile Service Helps Bring Down Infant Mortality". *OneWorld Africa*. 8 August 2007

Key Barriers (Senegal)

The main difficulty faced by Pésinet in Senegal was to ensure its financial sustainability, because Pésinet proved itself to be structurally loss-making. Apart from the revenue generated from the small fee charged to participating mothers, conceived as a monitoring instrument and a guarantee of the mothers' implication (150 CFA or US$0.30 per month for eight weighings and any required consultation with the doctors)[13], Afrique Initiatives financed the operations of Pésinet from 2002 to 2005 and provided monthly payments to cover budgeted expenses, as Pésinet was not intended to be self-sustainable. Indeed, making it self-sustainable would have meant charging higher fees that would have prevented the lowest-income families from benefiting through Pésinet's services, thus hampering the company's social mission. Pésinet's renovated business model in Mali would demonstrate that both self-sustainability and accessibility to low-income families is possible under certain conditions.

In Senegal, Pésinet's original business model envisioned four sources of funding to guarantee Pésinet's sustainability in the long run, which would rest on external resources, including:

- The sponsoring by private companies (relatively low cost for high media impact);
- The "sale" of tests by using the subscribers' database as consumers' panels;
- The support of foreign sponsors;
- The support of the national healthcare system, once the impact on public health had been proven.

Another source of funding would have consisted in using Pésinet as a pilot project for a larger provisioning system of local services by internet (e.g. job search, housing, transportation), once the local population has been acclimated to new technologies.

But despite its early successes and the enthusiasm that followed its inception, Pésinet never triggered significant financial support and, as a result, the above funding structure did not go beyond the theoretical stage. This was due in part to the apparent contradiction between Afrique Initiatives' nature (i.e. a private investment company in capital stock) and Pésinet's need for subsidies. However, according to its founders, this need would have been justified by the experimental nature of the project and its social orientation. The ultimate objective was to be able to test other economic solutions in different locations (higher registration fees, different registration formula, sales of medicines, etc.).

The weighing agents were paid between 50,000 to 75,000 CFA (US$100 to $150) per month, but as time went by, resources became scarce and the weighing agents started to quit. In the words of Dr. Dioum, one of the private doctors working for the project: *"We tried very hard to keep it going, but it was a lost cause![14]"* Despite all of their work and support for Pésinet, the doctors were not well paid either. A monthly contract was established with them, with salaries ranging from 75,000 CFA to 100,000 CFA (US$150 to $200). Although the doctors monitored the weight of the children and examined them when necessary, it was up to the

[13] The costs for a private consultation with a local physician are CFA 5,000 (US$8.75) and CFA 2,500 (US$4.37) for a visit to a public hospital.

[14] Interview with Dr. Massaer Dioum, March 14th 2007.

parents to pay for the prescriptions that their children might require. Pésinet tried to set up a small drug store to cater to the needs of those poor populations without much success. Despite the low fees for the mothers to enroll in Pésinet's programme, recovering the monthly dues proved to be a daunting task.

Without the ability to create a sustainable business model and given its own strategic reorientation and financial difficulties, Afrique Initiatives gradually left the project. At first, the local staff of Pésinet decided to take charge with Awa Gueye trying to make a difference, but her ultimate departure for Europe prompted the final downfall of Pésinet. After Afrique Initiatives' withdrawal, Pésinet was not able to pay its bills (rent, telephone, electricity, etc.). For instance, it had to ask for a moratorium from Sonatel, the main telephone company, to pay off an outstanding bill. By this time the income of the Pésinet staff and contractors was next to nothing.

When it was first established, Pésinet was seen as a model that could be emulated in other countries like Ivory Coast and Mali. However the business model itself was not sustainable and the organization was making only losses. The Pésinet initiative was finally wrapped up in October 2005. Some of the good will and the commitments of the various stakeholders remain and they do whatever they can to improve the health of the young children in their community, but the challenges are still to be overcome. Dr Dioum says: *"Since October 2005, we are vainly trying to create an association in the community to help benefit as much as possible from the Pésinet initiative"*.

Key Innovations (Mali)

Based on the lessons learned from the Senegalese experience, Pésinet in Mali included some key technical, financial and functioning innovations, as described below.

STRATEGIC PARTNERSHIPS

Pésinet established strategic partnerships with two major French telecommunications companies (Alcatel-Lucent and Orange), two renowned French schools (ESSEC Business School and Ecole Centrale Paris), a drug distributor (Medex) and a local NGO (Kafo Yeredeme Ton). Alcatel-Lucent and Orange offered their support to Pésinet on their own, driven by the "digital divide" issue and the conviction that some innovative solutions could be designed to reduce that gap. Their involvement intervenes within the framework of their Corporate Social Responsibility – although Orange gets some financial returns, because it charges for the SMS sent by the doctors. This direct involvement of the two companies is something quite innovative compared to the Senegalese project, where companies were only involved indirectly through Afrique Initiatives.

Alcatel-Lucent and Afrique Initiatives provided financial support and technical expertise. Medex also contributed to finance the project and provided a stock of medicine for the duration of the pilot phase. The Orange Mali Foundation also financially supported the project and supplied equipment (eight baby scales and six mobile phones). A team of students

from the ESSEC Business School and the Ecole Centrale Paris has developed the business plan as part of a joint academic programme aimed at creating innovative products or services. The Malian NGO Kafo Yeredeme Ton is running the operations locally and led the marketing campaign together with Pésinet by going door-to-door for a couple of months and raising awareness. The involvement of women community leaders in the programme then contributed to spreading the word as Pésinet was proven to be efficient.

The government and local authorities are informed but not directly involved. However, Pésinet's future expansion might require a closer relationship with the national healthcare authorities. Contrary to the Senegalese project, local hospitals in Mali do not see Pésinet as a competitor, because it was made clear that Pésinet would act upstream as a complementary system of early monitoring ultimately resulting in integrating the ailing children into the regular healthcare system.

FINANCIAL STRUCTURE

In Mali, the subscription fees are 500 CFA per month (US$1.05), i.e. about three times more than in Senegal, although they include access to medicines. Those fees will enable the project to break-even and become self-sustainable from 1,200 children onwards. They will be used to entirely cover the operation costs, consisting of the weighing agents' and doctors' wages, the scales renewal, the internet connection, the purchase of medicines and the salary of one manager. The doctors are from public hospitals and are either directly remunerated by Pésinet or indirectly through a financial contribution made to the institution to which they belong.

For the very low-income or numerous families unable to afford the service, Pésinet is currently developing a system of online child sponsoring, envisaged to cover half of the subscription fees. For instance, a donation of about US$12 would enable Pésinet to follow a child for one year. Other solutions foreseen include balancing out between neighbourhoods (some would pay higher fees in order to finance the low-income ones), or designing lower cost solutions for downgraded services (e.g. one weighing per week instead of two).

Subsidy schemes also include support from French local authorities within the framework of the "decentralized cooperation"[15], as well as donors' engagement (for instance, contacts have already been established with the Gates Foundation). Those latter sources of funds would provide the initial capital necessary to open a new site, i.e. US$14,000. Pésinet's future profits would also be dedicated to finance new self-sustainable sites, rather than being transferred to external shareholders. This fundraising process is one of Pésinet's main challenges so far, together with the reinforcement of local management structure done through hiring and training.

[15] Legal framework under which a French local authority can develop official relations with a foreign counterpart, including pairing, promotion activities, development aid, technical assistance, transborder cooperation, etc.

TECHNICAL INNOVATION

Under this new system, original computers are replaced by mobile phones. At the end of each weighing round, the information is sent through a specific phone application (called Java) to a centralized database. The doctors then use a computer application that restitutes the data into a graphic that shows the evolution of the children's weight. When an anomaly is detected, the doctor sends a SMS to the weighing agent, who provides the mother with a consultation voucher. As Africa counts more mobiles phones than land lines, working locally and reaching remote areas has become easier.

Lessons Learned & Future Developments

Although the Pésinet initiative in Senegal has left some positive legacies, such as educating mothers in the importance of regular check-ups for their children and mobilizing a network of health practitioners with a commitment to providing service to the poor; ultimately, the organization failed to achieve the financial sustainability it was seeking. However, from the stakeholders closest to the project, some lessons can be learned that can apply to any pro-poor social enterprise in low-income countries:

- It is important to gather competent and diverse specialized human resources to run a community project and not only depend on the leadership of a single person

- Designing self-sustainable business models is key to ensuring the long-term stability of pro-poor initiatives.

- A top down project is difficult to sustain over the long-term; it is much more effective to implement bottom up initiatives in poor countries

Michel Rocard explains the Pésinet project in Mali: *"One of the key elements of our approach for this project has been to partner with local structures. The fact that a local NGO is directly managing the project will undoubtedly help to ensure that the service is adapted to their needs and that they adhere to it."*

The pilot project in Mali will be evaluated in December 2007, in terms of both financial and medical performance. If as successful as it seems to be so far, it will be replicated both across and beyond Mali. Indeed, a feasibility study is already being carried out with a view to develop another pilot project in rural Mali and make Pésinet potentially available to more than 5,000 children by the end of 2008. Overcoming the particular barriers associated with rural areas – i.e. geographical spread of families, lack of transportation facilities that would slow the service and increase its cost, areas uncovered by mobile phones operators, etc. – is seen as an upcoming challenge for Pésinet and its partners. Pésinet also foresees opening new implementation sites in neighbour countries (Niger, Senegal, and Burkina Faso) in 2009, with a base of 10,000 children. As Pierre Carpentier explains, *"the system is technically, financially and medically successful, so expanding it is tempting."*

Conclusion

Pésinet initiative highlights how Information and Communication Technologies can effectively improve the living conditions of low-income people in poor countries. However, the Pésinet experience reminds us that developing sustainable projects in such challenging environments is an arduous task that often requires strategic partnerships, a strong business plan designed to ensure self-sustainability and a close involvement of the local community. In the words of Afrique Initiatives' former CEO, Pésinet is undeniably *"a useful innovation dedicated to a crucial cause in the perspective of development"*, and its recent success, due to the restructuring and renovation of its business model, makes its large-scale replication a realizable dream that will benefit thousands of poor children and their families.

References

The Communication Initiative Network. "Programme experiences: Pésinet and Saint Louis Net." Available at http://www.comminit.com/experiences/pds2006/experiences-3659.html.

World Summit on the Information Society. 2003. "Summit Highlights: High level specialists acknowledge the need of formulating national IT strategies." 11 December 2003. Available at http://www.itu.int/wsis/geneva/newsroom/highlights/11-fr.html.

Marsaud, Olivia. 2001. "Afrique Initiatives commits itself to developing private business." 25 July 2001. Available at http://www.afrik.com/article3092.html.

Kappès-Grangé, Ann. 2001. "In Sénégal with the pioneers of humanitarian capitalism." L'Expansion. 20 December 2001. Available at http://www.lexpansion.com/economie/au-senegal-avec-les-pionniers-du-capitalisme-humanitaire_18360.html.

World Resources Institute. 2003. "What Works: Afrique Initiatives Attempts at Combining Social Purpose and Sustainable Business." August 2003. Available at http://www.digitaldividend.org/pdf/afrique_initiatives.pdf.

United Nations Millenium Project. 2004. "Preliminary Country Profile: Senegal." February 2004. Available at http://www.unmillenniumproject.org/documents/Senegal_PreliminaryCountryProfileFeb03-04.pdf.

United Nations Development Programme. 2006. Human Development Report. Available at http://hdr.undp.org/reports/global/2002/en/indicator/cty_f_MLI.html.

United Nations. 2006. The Millennium Development Goals Report. Available at http://mdgs.un.org/unsd/mdg/Resources/Static/Products/Progress2006/MDGReport2006.pdf.

Pésinet. Official website. Available at www.pesinet.org.

Chibomba, Kevin. 2007. "Mobile Service Helps Bring Down Infant Mortality". *OneWorld Africa*. 8 August 2007.

Stockgroup Media Inc. 2007. "Alcatel-Lucent, the Orange Mali Foundation, Afrique Initiatives, Medicament Export and Kafo Yeredeme Ton provide preventative healthcare services in Bamako." 4 July 2007. Available at http://www.stockhouse.com/news/news.asp?newsid=5600743&tick.

Gerber, Dan. Mali Guide. OneWorld.net. Available at http://us.oneworld.net/guides/mali/development.

Picture sourced from Encyclopedia Britannica.

Maps sourced from Perry-Castañeda Library Map Collection. Available at http://www.lib.utexas.edu/maps/africa.html.

Interviews

Dioum, Massaer. Doctor, Pésinet. March 2007.

Jay, François. Former CEO, Afrique Initiatives. August 2007.

Carpentier, Pierre. Manager, Pésinet. 20 September 2007.

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The information presented in this case study has been reviewed and signed-off by the company to ensure its accuracy. The views expressed in the case study are the ones of the author and do not necessarily reflect those of the UN, UNDP or their Member States.

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