# Learnings from Vache du Faso

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The Vache du Faso project aimed to improve milk production in Burkina Faso by crossbreeding local low-yielding zebu cattle with more productive dairy breeds through fixed-time artificial insemination (AI). This brief describes key lessons learned and factors for success to consider in the design and implementation of future projects.

**Takeaway lessons**

Adopting a business approach before implementation is critical to **assess feasibility and sustainability.** A business approach should be used at each step to adapt the project, based on regular feedback from the field (customer satisfaction) and to changes in context. This also facilitates stakeholder buy-in and a **process of continuous improvement**.

The main output of the project was that all parameters were very accurately monitored and tracked, with the results demonstrating that with a full synchronisation protocol, conception rates in extreme climatic conditions can be almost as good as in Europe. However, while the program was very successful in getting cows into calf, equal emphasis should be given to working with farmers to optimise external factors, especially nutrition and health, in order to increase calf output. For an AI program to be successful, healthy weaned calves must be produced. **AI programs should target only carefully selected cows, and production systems and farmers able to ensure the health and nutritional status of those cows presented for AI.**

## Limitations and Lessons Learned

**Number of calves:** The recorded number of calves was known to be under-estimated due to: compulsory castration leading to farmer reluctance to report male calves; calves not surviving to one month or not presented at all not being recorded; and calves from the final AI campaign being born after the project had ended.

**Disease outbreak**: Cattle health and conception rates were affected by an outbreak of foot and mouth disease (FMD), reducing reproductive performance. **AI programs should be paused during disease outbreaks.**

**Technician experience:** Poor results were observed in the first AI campaign, partly due to a higher proportion of novice AI technicians. The pregnancy rate increased when expert AI technicians conducted inseminations.

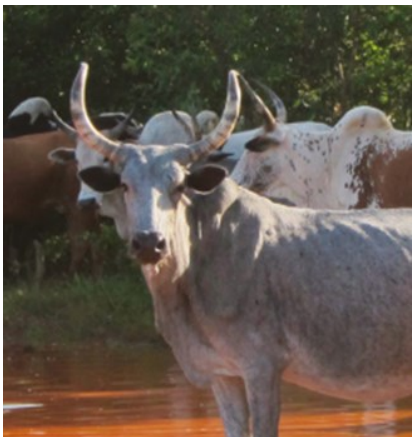

*Figure 1. Local zebu cow targeted by the AI program. Source: Ceva.*

**Lack of cow care**: Calf loss was much higher than expected, emphasising the importance of optimising technical conditions around AI, as well as working with farmers to optimise husbandry factors such as nutrition, management and health throughout the production cycle (Figure 2). **Inadequate access to feed was the likely predominant limiting factor,** as well as transhumance which placed additional physiological stress on the pregnant cows. There was an association between pregnancy and production system, with higher probability of peri-urban cows being pregnant than traditional transhumant cows. N.B. A body condition score of 1-3 was used; using **a conventional scoring system** (1-5 or 1-10) would have helped to allow comparison to other contexts.

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**Non-viable genetics strategy:** Survival rate of embryo transfers (for F1 breeders via female line) was too low to justify investment. Males were to be breeder bulls for F1 females, but semen production was sporadic due to limited state funding for laboratory maintenance. Despite considerable capacity building activities, the local public sector partner was unable to reliably provide the required technical services.

**High upfront costs and delay on returns**: Investments in cattle genetic improvement programs are very risky for farmers due to high upfront costs and delayed return on investment through increased milk yields. As such, cattle genetic improvement strategies cannot rely on private investments from farmers alone, but require buy-in, policy support, and subsidisation from the public sector (as in all countries succeeding in national dairy herd genetic improvement to date).

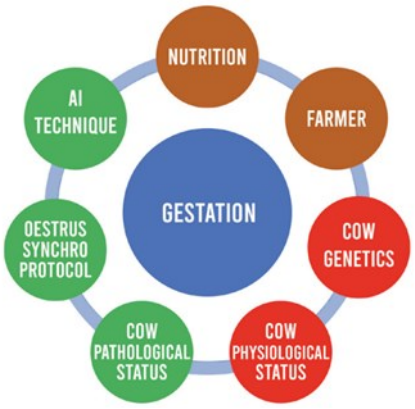



*Figure 2. Parameters impacting pregnancy rate. red = cow parameters; brown = rearing parameters; green = reproduction technical parameters. Source: Ceva.*

**Market demand and value chain:** The Vache du Faso project was initially developed for Nigeria. When the project was moved to Burkina Faso, there was a lack of initial demand for fresh milk and few milk collection sites as 90% of available milk is imported as milk powered. Existence of a value chain is required for program sustainability.

## Steps to Success

1. **Implement programs in favourable contexts**: First, determine the project scope at **local level** (farming systems and characteristics, organisation, management, location, herd size, breeds, technical capacity etc.; inputs and services providers e.g. feed and health; markets for products and interest in milk) and **national level** (national policies for cattle reproduction, dairy production, management of genetics, livestock identification and monitoring; public stakeholders involved in AI and genetic monitoring). **For AI programs to be sustainably impactful, governments must invest in capacity building and prioritise enabling policies and strategies.** It is **critical to adopt a business approach from the outset, to assess its feasibility and sustainability**, and to **highlight risks and solutions** to mitigate them. Marketing tools intended for business development should be used, e.g. market segmentation. To ensure farmers/ stakeholders benefit from their investment and the business model is sustainable**, there must be a market for their products and services.**

2. **Select and target appropriate farmers**: Farmers are the core of AI programs; apart from the technical manipulations by AI specialists, the entire downstream and upstream process is their responsibility. Therefore, farmers should be properly selected based on their ability to provide appropriate rearing conditions and to obtain value from the crossbreds' improved characteristics. **Farmers should be sensitised as early as possible** (at least one year before the activities start) so they can prepare. It is important to proceed progressively and focus on the crucial information allowing them to optimise results. In this project, **careful planning** meant that farmers

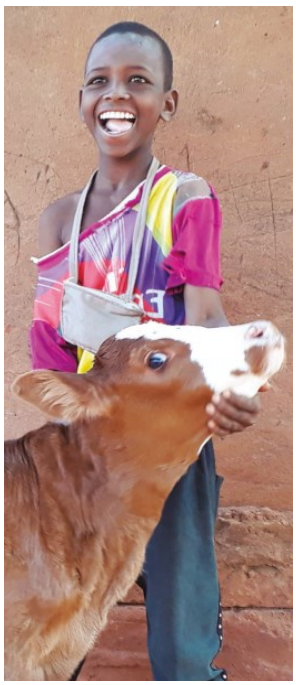


*Figure 3. Young farmer and his crossbred calf, legacy of the Vache du Faso project. Source: Ceva.*

were informed well in advance of the insemination round; this resulted in only 1% of cattle missing insemination - a very low rate of 'loss'. A commitment letter signed by each farmer stipulated all information and conditions they would need to fulfil to benefit from the program symbolised the **understanding and agreement of everyone's roles in the success of the project**, and was the basis for development of a trusting relationship. Farmers must have 1) good technical ability to manage their herd appropriately for AI, 2) secure access to necessary inputs such as veterinary services and feed supply, and 3) access to a stable and remunerative milk market for return on their investment. A business approach, with farmers directly investing their own money, even if subsidised, is crucial to ensure only those that understand how the service could improve their herd get involved, and to provide motivation for success. **By segmenting the market, the most appropriate farmers can be targeted, to optimise the return on program investments**.

3. **Field team rigor and efficiency**: Due to the precise timing of fixed-time AI, extreme rigor is required and organisation must be optimal. It is important to **hire qualified people with sufficient technical background**, and to provide support to junior staff. Tasks must be allocated clearly to ensure roles and responsibilities are understood. Regular follow-ups should be carried out to identify training gaps for capacity building. Successful AI programs are resource-heavy, particularly human and technological resources. Good data management and calendarisation is essential to synchronise the activities and manage logistics, equipment and follow-up.

4. **Secure upstream supply and downstream market**: It is essential to ensure markets are secured, to prevent investments being wasted. Upstream, access to feed is most critical and as such, only farmers owning pasture and able to provide hay and silage in sufficient quantity, or with an agreement with commercial fodder producers should be selected. Downstream, farmers must have access to a dependable and viable milk market allowing for the most rapid and sustainable return on investment possible. It is also important to consider farmers' access to milk collection services and processing units which can be few and located around big cities.

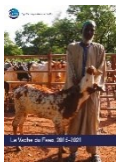
**Recommendations and requirements for AI program success**:

- Focus efforts only in contexts where the key success factors can be achieved, to ensure investments yield healthy crossbred cows able to express their improved genetic potential.
- Prerequisites to allow measurable impacts on the development of the sector and on livelihoods are 1) the existence of national incentive policies, 2) a functioning value chain, and 3) the ability to sensitise and train farmers.
- **Determine both the local and national scope** of the project, by considering farming systems, location, breeds, technical capacity, and national policies and public stakeholders. Implement AI programs where there are pre-existing milk markets.
- Use marketing tools intended for business development e.g. segmenting the market helps to ensure **farmers and inseminators can benefit from their investment**; ensure there is a **market for their services and produce**; and ensure the **business model's sustainability**. This limits risks of failure by highlighting all factors that could impact results negatively, and incorporating mitigating solutions.
- Use **sensitisation meetings** with farmers in the initial project phase, presenting objectives and expected outcomes; this helps them understand the conditions of their participation, the major role they would play in its success, and the potential risks and benefits.
- Ensure enabling policy and business environment exists to enable risk mitigation along the value chain, encouraging stakeholders to invest.
- Where it is not possible for favourable conditions, concentrate the most technically demanding and critical aspects of the production cycle in a few farms able to provide high management standards.

- Net cost of AI to farmers depends on the key success factors: the context, the targets, the insemination team, and methods. In considering these factors, costs will be reduced by assessing potential impact, identifying the levers that can optimise the investments and increase chances of success.
- Optimise pregnancy rates by: excluding cows >10 years; focus on disease-free farms with management compatible with AI; use a full 8-day synchronisation protocol (see full report via link below, p13-14); use expert technicians on cows showing overt oestrus signs.

**Read the full report**

La Vache du Faso: Improving milk production in Burkina Faso (2023).
https://www.ceva.com/commitments/la-vache-du-faso-improving-milk-production-in-burkina-faso/



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