

Identification of potential feeds and forages technologies for scaling together with scientists, private sector, development partners and farmers (in Kenya, Rwanda, Tanzania and Ethiopia)

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The identification of potential feeds and forages technologies for scaling was an important exercise and showed how crucial and important the identification process is.

The right choice of the technology for the defined focus group determines already if the scaling efforts can lead to a success or not. The idea coming as a scaling person to CIAT, getting the technology or even better a ready product in the hand with the ‘go’ for scaling did not come true. It took a lot of exchange with scientists from all over the CRP to bring the identification process forward. One of many difficulties is that scientists, development agencies and scaling people follow different approaches, talk different languages and have last but not least different interests.

After a long process of interaction with scientists, literature studies and comparison the decision was taken to concentrate on the scaling of improved forages. This decision is partly connected to the fact that the scaling position is located in the Tropical Forages Group of CIAT which is working for decades on the improvement of tropical forages, the other reason was the lack of alternatives proposed by the colleagues within the CRP.

Beside the supply side it is important that the offered technologies scope with the demand side, in our case mainly dairy farmers or forage producers which produce for them. To be uptaken at scale a technology must be simple, easy to manage, bring a fast result and improve significantly the situation of its users. That is given in our case of the introduction of improved forages. Main practices of forage cultivation are close to other agricultural practices and the specifics are easy to apply.

As the first choice for scaling *Brachiaria* Hybrids have been identified. The Hybrids are a result of longterm breeding work of CIAT and have been first been introduced in farming systems in South America by Papalotla. They were selected on the basis of improved performance compared to the ‘traditionally used feed plants’ and seed availability. The Hybrids are characterized by improved drought resistance, high protein content and a good palatability and others. As availability of seeds is often a bottleneck, the availability of seeds on the market was another important reason for the

Brachiaria Hybrids. CIAT's privat sector partner Papalotla / Tropical Seeds registered 3 Hybrids and is selling the seeds in Kenya since end of 2016.

The seeds were introduced in the market with moderate success by Advantage Crops a local partner of Papalotla, since beginning of 2018 a second distributor was added with Amiran Kenya to push sales.

The **3 *Brachiaria* Hybrids are Mulato 2, Cayman and Cobra**. They are also in use with the push pull technology promoted by ICIPE all over EA.

As we do not want to limit the choice of the farmers only to the 3 Hybrids, we were looking for other promising forages and found them in 4 Cultivars of *Brachiaria*. The cultivars tested are coming out of selection processes conducted over many years in Columbia and Brazil by CIAT, EMBRAPA and others. The 'Climate Smart *Brachiaria*' project tested *Brachiaria* cultivars in Kenya under different agro-ecological conditions.. At the end of the three year project **4 *Brachiaria* cultivars (Xareas, Piata, MG 4, Basilisk)** have been selected in a participatory process within the 'Climate Smart *Brachiaria* Programm'. The cultivars are characterized have good drought tolerance, slightly lower protein contents as the Hybrids, but the germination rate seems to be higher. As the Hybrids they adapt good to different soil types and in general are decribed as a significant better alternative to other forages in use.

These cultivars are actually only available by Research Centers (mainly KALRO, ILRI, CIAT), the registration process is ongoing and should be finished by mid-2019. These cultivars are promoted by BECA-ILRI and parts of KALRO, who have been main partners in the above named project.

As a complement to *Brachiaria* Scientists of the Tropical Forages Team recommended also to scale **3 *Panicum maximum* cultivars (Mombassa Tanzania and Massai)**. *Panicum maximum* cultivars are decribed by the forage scientists as an alternative to *Brachiaria* and and as a species with high potential. Especially the proposed cultivars Mombassa and Tanzania are interesting for their high biomass production. Massai is growing less vigorous but decribed as highly drought resistant and can be hayed, which is not possible for the other two. The general inconvenience of *Panicum* compared to *Brachiaria* is that they are more demanding for fertile soils.

These reintroduced grasses are complemented by 2 legumes (*Vetch* and *Desmodium*) which are already in small scale use in Kenya, mainly for soil improvement and as a source of protein. Seeds are locally available but as ICIPE is using *Desmodium* in the push pull system the demand still exceeds the availability.

By the choice of the above named forages we offer a wide choice of different Hybrids and cultivars to the farmers in the different agro-ecological zones. They improve the productivity and quality of forage and can be conserved in different ways, meaning the planting of forages is improving the feed situation all year round.

The selection of the plants was mainly based on Kenyan experiences but first experimental plantations in the other 3 countries confirm the good performance and competitive advantage to ‘traditional feed stuff’ of the selected forages also there.