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Business plan to better utilize wasteland grass along the road side in Udupi district into good quality livestock feed after value addition and densification

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International Livestock Research Institute



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Background

The International Livestock Research Institute (ILRI) is one of the CG consortium partners (led by ICRISAT) implementing the Bhoosamrudhi project funded by Government of Karnataka. As part of the project ILRI has been implementing the **FeedIntense** activity in Bidar, Chikballapur, Udupi and Dharward, which focuses on feed based intensification through use of better cultivars, chopping and nutrient balancing.

Based on a request from the Deputy Director (AH Department) of Udupi district to utilize road side grass as animal feed, the ILRI team visited the site, interacted with stakeholders and collected grass samples for nutritional analysis. The visit revealed that the road side grass (wild pearl millet, also called mission grass *Pennisetum polystachion*) is of relatively higher digestibility and is available along the road side about 800 km, 2m+2m wide on either side measuring 320 ha, producing 11200 tons of green fodder from September to February. This fodder grass if value added and conserved can be used in deficit locations and lean seasons.

About the project:

The road side grass *Pennisetum polystachion* available from September to February will be harvested using Brush cutters (weed walker), sundried for 3–4 days, sorted to remove unwanted materials and loaded on to a truck to carry it to feed processing unit. In the processing unit, a 10HP diesel cum electric chaff cutter will be used to chop the dried grass (dry matter 85–90%¹) and mixed with locally available concentrates, mineral mixture, salt and calcium propionate (to prevent fungal growth) to convert to Total Mixed Ration (90% DM, 65% IVOMD) with an ME of 9.0 MJ and CP 12% per kg dry matter. It will then be fed to a mini baler cum wrapper, which will bale 60kg baled and wrapped Total Mixed Ration (TMR).

It has been proposed to set up the processing unit in one of the *Gosalas* in Udupi (with more than 1200 cattle), where the Municipality and AH Department are currently

¹ If moisture cannot be brought down to 10–15%, it can be converted into silage without adding any concentrates

providing support (receiving funds from central Govt. to the tune of INR 10 lakh per year). The TMR will be stored for use during lean season of 4 months and surplus available, if any will be sold to other *Gosalas* and dairy cooperatives in or outside the district. Market information shows that each TMR bale (60 kg) can be sold @Rs780 (Rs 13/kg). If possible, depending on availability of time and resources, a feeding trial will also be conducted to know the impact of feeding the TMR on milk yield, additional cost and benefit.

Governance

The whole operation shall be managed by the *Gosala* Trust, technically administered by ILRI and governed by a committee consisting of the following members:

1. Joint Director (Agriculture), Udupi
2. Deputy Director (AH Department), Udupi district
3. Representative, Municipality, Udupi
4. Representative, ILRI
5. Representative ICRISAT

Finance

The anticipated budget for one year is about 13.14 lakh INR, of which capital investment towards bush cutters (9), chopper (1) and mini baler cum wrapper (1) is 12.20 lakh (see Table)

No	Item	Details	Qty	Actual cost (INR)	Cost sharing (proposed)
1	Fixed costs				
1.1	Bush cutter	to cut 222 cutters=2 ton kg/day x 9	9	70,000	Bhoosamrudhi
1.2	Dual (Electric+Diesel) chopper	to chop to 10–12 mm	1	1,50,000	Bhoosamrudhi
1.3	Mini baler cum wrapper	200 bundles of 60 kg each =12 ton/day	1	10,00,000	Bhoosamrudhi
2	Operational cost/day				
2.1	Feed additives/ concentrates	Concentrates, MM, salt	3 ton	45,000	Customer
2.2	Petrol for bush cutter		30 lit/day	2500	Municipality

No	Item	Details	Qty	Actual cost (INR)	Cost sharing (proposed)
2.3	Labour	Cutting, sorting, loading, unloading, operating baling machines etc.	9+9+2	10,000	Municipality
2.4	Transportation (to Feed unit)			1000	Municipality
2.5	Wrapping tape	For 200 bundles/day	60*200	30,000	Bhoosamrudhi
2.6	Space charge, electricity, maintenance.			1000	Gosala
Total operational cost			Per day (12 ton)	94,500	
Total operational cost			Per bundle	472.00	
Total operational cost			Per kg	7.85	

As the proposed **FeedLink** activity has not been included in the ILRI budget, the capital cost may be incurred from Bhoosamrudhi funds and operational cost may be shared among the customers (those who use the feed for feeding their animals), Municipality and *Gosala*.

Replicability

The Udupi feed unit may be run initially as a government support programme to support farmers to feed their animals during lean season at the same time helping the Municipality to clear the Municipal area, for which they already have a budget. However, an economic analysis will also be carried out to see feasibility of such units so that private entrepreneurs can be encouraged to start similar feed processing units in surplus areas to process either green or dry fodder (straws and stovers) into TMR to cater to deficit areas such as Dharward, where there is an acute shortage of feed. It will also help to create fodder banks.

Implementation of business plan

ILRI is one of the CG consortium partners (led by ICRISAT) implementing Bhoosamrudhi project funded by Government of Karnataka. Based on a request from the state government line department to utilize road side grass (Figure 1 and 2) as animal feed, the ILRI team visited the site, interacted with stakeholders and collected grass samples for

nutritional analysis. NIRS analysis revealed that the road side grass (botanically identified as *Pennisetum polystachion*, commonly known as wild pearl millet or mission grass) is of relatively higher quality (Crude Protein 7% and digestibility 55%) and is available along the road

Side about 800 km, 2m+2m wide on either side measuring 320 ha, producing 11,200 tons of green fodder from August to December.



Considering the potential to use the grass in the deficit season and/or in distant locations, it was decided to convert this grass into silage using a mini wrapper cum baler (Figure 3).



The municipality who used to dump the grass in the junkyards (after clearing it from the road side using Brush cutters /weed walker), when approached, agreed to supply the same to a nearby *Gosala* (cattle welfare centre), where more than 1000 cattle are housed. This motivated the team to install the baler cum wrapping machine in the *Gosala* (Figure 4).



Figure 4



Figure 5

The sundried grass (moisture 40%) brought by the Municipality (at their own cost) was chopped using a 10 HP chaff cutter (Figure 5) and mixed with locally available legume haulms (ground nut/ mung bean /green gram) in the ratio 65:35. The chopped mixture was then fed to the mini baler cum wrapper, which compressed and wrapped the grass legume mixture to 40 kg bales (Figure 6, 7).



Figure 6



Figure 7

The fodder processing unit was inaugurated by the head of *Gosala* in the presence of officials from Agricultural Department, Department of Veterinary and Animal Husbandry, ILRI and ICRISAT representatives. In this unit it is planned to produce about 10,000 bales during a period of five months (August to December), when the grass is available in plenty. The process was also exposed to private feed manufacturers in the district. Some of them have already expressed interest to produce the 'enriched silage bales' as a commercial product and supply to dairy farmers in the project districts. Towards this ILRI has agreed to provide technical support and training to the interested entrepreneurs.



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