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**Strengthening Oil-palm Processing in Keegbo
(Ijebu-North Local Government Area) and
Ilaho (Obafemi-Owode Local Government Area)
of Ogun State**

624.6
OGA

Project proposal submitted by:

**Ogun State Agricultural Development Programme
(OGADDP), Abeokuta**

to:

**SEMI-ARID FOOD GRAIN RESEARCH & DEVELOPMENT
(SAFGRAD) LAGOS, NIGERIA**

JUNE, 2001

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1.0 BACKGROUND

1.1 **Title of Proposal: Strengthening oil-palm processing in Keegbo, Ijebu-North Local Government and Ilaho, Obafemi Owode Local Government Area of Ogun State.**

1.2 Background information

Oil palm is a major tree crop in the communities. In each of Ilaho and Keegbo communities only one unit of oil palm processing of plant exists. However, the digesters that are in use are of very old design and low capacity that cannot cope with the available palm fruits. The provision of a modern equipment and of higher capacity will lead to higher palm oil production and reduction in oil palm fruit losses currently experienced in the area.

It is also being proposed that the entire processing line be upgraded with the provision of a clarifier for a better quality final product and a kernel cracker for optimal utilization of the equipment all year round.

The problem being tackled by this proposal is ranked highest, currently, by the intended beneficiaries based on the rapid rural appraisal conducted by OGADEP prior to the preparation of the proposal.

- i. Name: Ogun State Agricultural Development Programme (OGADEP) Abeokuta is submitting the proposal on behalf of Keegbo and Ilaho Communities in Ijebu-North and Obafemi-Owode Local Government Areas of Ogun State, respectively.
- ii. Location: Keegbo – Ijebu North LGA - Owolowo Farmers Group
Ilaho - Obafemi Owode LGA - Mr. Victor Adeboye
- iii. Address: c/o OGADEP, PMB 2122, Abeokuta, Ogun State
- iv. Current Occupation: Farming
OGADEP (Agricultural Extension)
- v. Team Leader: Programme Manager, OGADEP

1.3 Statement of Project-goals and Objectives

The project goal is to improve oil palm processing in two communities (Keegbo and Ilaho) thereby enhancing the quantity and quality of palm-oil produced and farm income.

Specifically, the objectives are to:

- a. Increase quantity of oil-palm products - higher output of the oil palm products are expected from improved processing compared with the traditional method;
- b. Strengthen the linkage between producer and industrial users - increased output will warrant a closer link between the producers and the consumers and users; and
- c. increase the income of women processors in the communities - since more palm oil will be produced per unit quantity of palm fruits processed.

1.4 Justification

Farming is the chief occupation in Keegbo and Ilaho communities. The farmers produce arable crops such as maize, cassava melon, yam coco yam etc and tree crops like oil palm , cocoa, citrus etc. Large hectarages of oil palm trees are predominant in the area.

Processing of oil palm fruits in the two communities in focus is traditionally the exclusive concern of the women folk while the men carry-out the harvesting.

Mechanized oil palm processing is not completely new to these two communities as evident by the availability of some machinery that, to a great extent, reduce the drudgery associated with the traditional system. The appropriate intervention required by these communities is the upgrading of the existing processing facilities.

The introduction of an upgraded mechanical device that will more efficiently and effectively remove the oil from the stripped fibre will not

only remove the drudgery of the women processors, but will also reduce the time per unit operation and result in higher oil extraction rate.

The introduction of a vertical mechanical digester of a higher capacity coupled with prime mover of appropriate horse power have been identified as the most viable intervention that can positively enhance the economic status of the two communities and overall food security of the area

In recognition of the seasonality of palm fruits harvesting, limiting the processing activity to between February and May of each year, the introduction of a subsidiary processing machine to process the palm kernel nuts will serve as another viable source of revenue to the women processors as they are the subsequent custodian of this by-product.

2.0 PROJECT PROPOSAL COMPONENTS

2.1 Elaboration of the proposal

The current oil palm fruit and in the project area has been influenced by modern technology. There exists digesters of old and obsolete designs and of lower output.

The introduction of a modern equipment of higher capacity will not only lead to an increase in output per unit produce processed but will also remove drudgery and provide high quality/hygienic products. This will also affect other down stream activities.

Considering the seasonality in the supply of palm fruits, as well as the perishability of the fruits, only oil extraction will be emphasized during the major harvesting period of the oil palm bunches (Feb – May). This will reduce losses as well as promote the quality of palm-oil produced. All palm kernels from the processing efforts will be collected together for cracking after the initial palm-oil production season. OGADEP has identified a women group (Keegbo) and an individual (Ilaho) involved in oil

palm processing the communities. A number of improved technologies extended to the communities had been adopted by members of these communities. Such technologies include, improved varieties of different crops, plant population, use of fertilizer and improved processing (cassava, soyabeans etc) methods.

SAFGRAD/USAID Support to the identified communities will be coordinated by OGADEP in collaboration with relevant National Agricultural Research Institute (NARIs). This will include National Institute for Oil Palm Research (NIFOR) and Nigeria Stored Products Research Institute (NSPRI). This will foster adequate technology transfer and appropriate research-extension linkage for effective and efficient utilization of the facilities to be provided to the two beneficiaries.

a. **Nature of Project Proposal and data to be documented**

The project is a cottage level agro-allied enterprise designed to maximally extract palm oil from the oil palm fruits with a view to increasing the income of the farmers. Also, more palm kernels will be produced from the palm oil production process due to increased level of activity.

Data to be documented will include volume of palm fruits processed, volume of palm-oil extracted, volume of other by-products e.g. palm kernel, dry slurry and others, cost of processing, demand for oil palm products, sales, product prices etc.

b. **Choice of technology**

The processing equipment is made up of the Digester, Prime Mover (6HP Diesel Engine), clarifier and the Palm Kernel Cracker. All these machines can be locally sourced and fabricated. Moreover, they are simple to transfer, easy to operate and

maintain, cost effective and affordable for cottage level processing. As presently done, palm oil will be stored in plastic containers.

c. **Project activities**

The activities of the proposed project will include the following:

- i. Construction of processing shed
- ii. Provision of potable water for processing
- iii. Procurement of equipment
- iv. Installation of equipment
- v. Test-running of equipment
- vi. Training of operator and mate
- vii. Supply of raw materials
- viii. Production of palm oil
- ix. Marketing of Products
- x. Machinery turn-around maintenance
- xi. Documentation of activities
- xii. Quarterly Review of Activities
- xiii. Quarterly Meetings
- xiv. End of year review/annual general meeting

d. The project will generate the following output

- i. reduction in drudgery associated with processing amongst women;
- ii. increased quantities of palm oil and palm kernel produced; and.
- iii. increased income and improved standard of living.

e. **Capacity building**

- i. Training of operator and the mate on quality control and safety precautions. This will reduce industrial hazard and accidents thereby ensuring continuous production and high capacity utilization. It will also reduce production cost. The training of the operator (and mate) will, moreover, promote

cost effectiveness, efficiency and factory sanitation.

This will further enhance the product quality and facilitate compliance with regulatory standards. This will catalyse product acceptability. A sum of N30,000 (thirty thousand naira only) as honoraria and cost fees is estimated.

- ii. Training of farmer-beneficiaries on group dynamics (group management, leadership qualities and record keeping). This is necessary to enhance the managerial capability of key officers of the group towards successful project implementation. Cost proposed for this component of capacity building is N37,250 (thirty seven thousand two hundred and fifty naira only) as course fees.

2.2 **Conditionality**

The relevance of this proposal is predicated on the following:

- research and extension linkage will be fostered through OGADEP which is the agricultural extension arm of the Ministry of Agriculture;
- the community is prepared to pay the matching fund of 50% (in cash/kind);
- participation of women and development of women will be promoted;
- experience of the community and the women group in cassava grating and other agro-processing activities will be useful;
- market is available for the product;
- enhanced generation of rural incomes; and
- it is sustainable

2.3 **Proposed Utilization of the grant and matching funds**

A total budget of N950,000.00 (nine hundred and fifty thousand naira only) or USD 7,916.67 (seven thousand nine hundred and sixtenn dollars sixty seven cents) is proposed for two years' operation. Table I

presents the breakdown along with the proposed financing sources. The summary of the utilization of the grant and matching funds is presented in Table II.

The table shows that SAFGRAD/USAID's grant will be utilized in (i) the purchase of a unit each of oil-palm digester, diesel engine (6hp), palm kernel cracker, palm oil clarifier and palm fruit stripper, (ii) the installation of the plant and equipment, (iii) the construction of one dug-out well in the project site and (iv) the capacity building of the operator, the mate and leaders of the Farmers' group. On the other hand, the matching funds will be expended on the construction of processing shed, the purchase of drums, plastic containers, payment of salaries of operator and mate and other operating costs. An attempt has been made to equally share the project cost between the beneficiaries and SAFGRAD/USAID. This has necessitated the proposal that SAFGRAD/USAID will pay the mate's salaries for one year (i.e N62,500).

2.4 The plan of work of two years

Figure I presents the time-line chart of the proposed activities in two years. Tentatively, the project start-up is considered as October 2001

2.5 Estimates of return and benefits due to investment

A return of about N480,000 (four hundred and eighty thousand naira only) per annum is estimated to be earned from oil palm processing while additional N200,000 – N250,000 can be generated from custom cracking of palm kernel.

The following assumptions are made:

Digesting about 10mt of palm fruits/day for about 5 months (i.e 1,200mt palm fruits in the production season)

Processing Charge = N400/mt (palm fruits)

Other benefits from the investment include:

- (a) shorter processing time per unit produce resulting in higher efficiency;
- (b) quality palm oil will be produced by the project which will command a better price;
- (c) drudgery will be removed in oil palm processing. Labour released will be useful in other productive activities; and
- (d) more palm oil will be produced per unit raw material/fruit.

Table 1: Funding and Budget Estimate of Keegbo and Ilaho, respectively

					COST, YEAR 1		COST, YEAR 2		FUNDING SOURCE
S/N	DESCRIPTION	UNIT	QUANTITY	PRICE	N	\$*	N	\$*	
1.0	CIVIL WORKS								
1	Construction of Processing Shed	Lumpsum	1	200,000	200,00.00	1,666.67	-	-	Community
2	Deep well	Lumpsum	1	30,000	30,000.00	250.00	-	-	SAFGRAD/USAID
2.0	PLANTS & EQUIPMENT								
1	Oil Palm Digester								
1	6h.p Diesel Engine	No	1	100,000	100,000.00	833.33	-	-	SAFGRAD/USAID
2	Palm Kernel Cracker	No	1	40,000	40,000.00	333.33	-	-	SAFGRAD/USAID
3	Palm-Oil Clarifyer	No	1	40,000	40,000.00	333.33	-	-	SAFGRAD/USAID
4	Palm Fruit Stripper	No	1	65,000	65,000.00	541.67	-	-	SAFGRAD/USAID
5	Installation	No	1	7,500	7,500.00	62.50	-	-	SAFGRAD/USAID
6		Lumpsum	1	25,250	25,250.00	210.42	-	-	SAFGRAD/USAID
	ACCESSORIES								
3.0	Empty Drums								
1	Plastic Containers	No	4	1,500	6,000.00	50.00	6,000.00	50.00	Community
2	(50 lt Jerry cans)	No	20	250	5,000.00	41.67	5,000.00	41.67	Community
	OPERATION COST								
4.0	Salaries								
1	a. Operator								
	b. Mate	No	1	72,000	72,000.00	600.00	72,000.00	600.00	Community
	Fuel	No	1	62,500	62,500.00	520.83	62,500.00	520.82	Comm./SAFGRAD
2	Lubricant	Litre	600	30.00	18,000.00	150.00	18,000.00	150.00	Community
3	Servicing	Keg	4	1000.00	4,000.00	33.33	4,000.00	33.33	Community
4	Capacity building	No	4	5000.00	20,000.00	166.67	20,000.00	166.67	SAFGRAD/USAID
5		Lumpsum	1	Lump	30,000.00	250.00	37,250.00	310.42	SAFGRAD/USAID
	TOTAL				725,250	6,043.75	224,750	1,872.91	-

* 1.0 \$ = N120.00

Table II: Summary of the proposed utilization of the grant and Matching funds of two years of Keegbo and Ilaho

SAFGRAD/USAID			COMMUNITY		
	N	\$*		N	\$*
Deep well	30,000	250.00	Construction of Processing Shed	200,000	1,666.67
Oil palm Digester	100,000	833.33	Empty Drums	12,000	100.00
6 h.p Diesel Engine	40,000	333.33	Plastic Containers	10,000	83.33
Palm kernel Cracker	40,000	333.33	Operator (salaries)	144,000	1,200.00
Palm oil Clarifyer	65,000	541.67	Fuel	36,000	300.00
Palm Fruit stripper	7,500	62.50	Lubricant	8,000	66.67
Installation	25,250	210.42	Mate's salaries (One Year)	62,500	520.83
Servicing	40,000	333.33			
Capacity building	67,250	560.42			
Mate's salaries (One Year)	62,500	520.83			
Total	477,500	3,979.16	Total	472,500	3,937.50

*1.0 \$ = N120.00

Fig. I: Timeline Chart For 2-Year Period Of Implementation

ACTIVITY	OCT.	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JULY	AUG	SEPT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEPT
Construction of appropriate processing shed	█																							
Provision of potable water	█	█	█																					
Procurement of equipment	█	█	█																					
Installation of equipment			█	█	█																			
Test-Running of Equipment			█	█	█																			
Training of operator and mate			█	█	█																			
Supply of Raw materials					█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█
Scheduling of operations					█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█
Production of Palm oil					█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█
Marketing of produce					█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█
Servicing/Maintenance of equipment												█	█	█	█	█	█	█	█	█	█	█	█	█
Machinery turn-around																								
Documentation of Activities	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█
Quarterly Review of Activities				█				█				█				█				█				█
Quarterly meetings				█				█				█				█				█				█
End of the year Review/Annual General meeting												█	█	█	█	█	█	█	█	█	█	█	█	█
Extension services	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█

PY1: Oct 2001 - Sept 2002; PY2: Oct 2002 - Sept 2003

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2001-06

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