

付 属 資 料

1. 討議議事録 (M/D)
2. 収集資料リスト
3. ヒアリング結果

MINUTES OF DISCUSSIONS
ON THE SURVEY ON THE JAPANESE GRANT ASSISTANCE
FOR THE FOOD SECURITY PROJECT FOR UNDERPRIVILEGED FARMERS
IN THE KINGDOM OF BHUTAN

In response to a request from the Royal Government of Bhutan for the Japanese grant assistance for the food security project for underprivileged farmers for Japanese fiscal year 2010 (hereinafter referred to as “2KR”), the Government of Japan decided to conduct a survey and entrusted the survey to the Japan International Cooperation Agency (hereinafter referred to as “JICA”).

JICA sent to the Kingdom of Bhutan a Survey Team (hereinafter referred to as “the Team”), which is headed by Dr. Kunihiro Tokida, Senior Advisor of JICA, and is scheduled to stay in the Kingdom of Bhutan from 21 November to 9 December, 2010.

The Team held a series of discussions with the officials concerned of the Royal Government of Bhutan and other stakeholders.

As a result of discussions and field survey, both parties confirmed the main items described in the ATTACHMENT.

Thimphu, 8th December, 2010



DR. TOKIDA KUNIHIRO

Leader

Survey Team

Japan International Cooperation Agency



RINCHEN WANGDI

Chief Programme Coordinator

Development Cooperation Division

GNH Commission

The Royal Government of Bhutan



SHERUB GYALTSHEN

Secretary

Ministry of Agriculture and Forests

The Royal Government of Bhutan

Witnessed by



NAMGYEL WANGCHUK

Chief Budget Officer

Department of National Budget

Ministry of Finance

The Royal Government of Bhutan

ATTACHMENT

1. Procedures of 2KR

- 1-1. The Bhutanese side understood the objectives and procedures of 2KR explained by the Team, as described in ANNEX-I.
- 1-2. The Bhutanese side will take the necessary measures for smooth implementation of 2KR as described in ANNEX-I.

2. System of 2KR for Execution

- 2-1. The responsible organization for 2KR is Ministry of Agriculture and Forests (MOAF). The implementation organization is Agriculture Machinery Center (hereinafter referred as AMC), Department of Agriculture (DOA), MOAF.
- 2-2. Distribution System is as described in ANNEX-II.

3. Target Areas, Target Crop(s) and Requested Item(s)

- 3-1. Target area of 2KR in fiscal year 2010 is the whole country.
- 3-2. Target crops of 2KR in fiscal year 2010 are rice, maize and wheat.
- 3-3. After discussions with the Team, the items described below were finally requested by the Bhutanese side.

No	Items (Original)	Quantity	Priority	Country of Origin
1	Two Wheel Tractor with Rotary Tiller	300	1	Japan
2	Spare parts for Item 1 (20 % of FOB price of Item 1)		1	
3	Single Reversible Plow	310	1	Japan
4	Spare parts for Item 3 (5 % of FOB price of Item 3)		1	
5	Trailer	300	2	Preferably Japan
6	Spare parts for Item 5 (5 % of FOB price of Item 5)		2	

- 3-4. The detail of distribution system for 2KR 2010 is as described in ANNEX – II. All of the machinery will be distributed in a same manner.
- 3-5. It is agreed by both sides that the items can be rejected in conjunction with the total amount of budget provided by the Japanese side to implement 2KR 2010 in Bhutan.
- 3-6. In distributing the 2KR machinery, the priority is to be given to specific types of targets in order to widen the opportunity of utilizing agricultural machinery for



farmers who have been less in chances to acquire them and to increase food production. The guideline/criteria for distribution and monitoring of power tiller is given in ANNEX-III, and this will be applied on the targets and distribution under 2KR 2010.

4. Counterpart Fund

4-1. The Bhutanese side confirmed the importance of proper management and use of Counterpart Fund, and explained the executing system as follows;

a. Deposit System

Before the delivery of the 2KR product to a farmer, the farmer will pay the obligatory amount of the product to AMC directly or through the district (Dzongkhag). The district will send these payments to AMC as they arise.

The counterpart fund is deposited to an account of AMC, which bank account will be determined and be informed to JICA in prior to the signing of G/A.

b. Responsible Organization

MOAF is the responsible organization for deposit of Counterpart Fund.

c. Semi-annual Statement of Account

MOAF submits semi-annual bank statements of the Counterpart Fund account to JICA. The latest status of the Counterpart Fund deposit is as shown in ANNEX-IV.

d. Utilization Plan of the Fund

MOAF will reports the “Utilization Program” of the fund to JICA.

4-2. The Bhutanese side agreed to introduce external auditing for proper management and use of the Counterpart fund. Furthermore, the Bhutanese side promised to submit the external audit report upon the Counterpart Fund account of 2KR 2004, 2006, 2007 and 2008 to JICA.

4-3. The Bhutanese side promised to give priority to projects aimed at the development of small-scale farmers and poverty reduction for the use of the Counterpart Fund.

4-4. The Bhutanese side promised to accumulate the Counterpart Fund of 2KR 2008 to reach to one hundred percent by the end of March 12, 2013.

5. Monitoring and Evaluation

5-1. The Bhutanese side agreed to monitor the distribution and utilization of procured items.

5-2. The Bhutanese side agreed to submit a monitoring report of 2KR to JICA when the Liaison meeting is held.



6. Other relevant issues

6-1. Based on the field survey and discussions with concerned people, the Team drafted an estimation of potential demand of power tillers for mechanization as shown in ANNEX-V. The Bhutanese side agreed to analyze and revise it for drafting a distribution plan for 2KR 2010. The Bhutanese side also agreed to draft a more comprehensive agriculture mechanization plan toward the 11th five year plan.

6-2. The Bhutanese side took into account to introduce categorized payment of Counterpart Fund for different target groups i.e. individual farmers pay more amount while group farmers pay less in order to promote more group use among underprivileged farmers.

6-3. It was agreed by the both sides to invite Gross National Happiness Commission and Ministry of Finance to the Consultative Committee as members in addition to DOA, AMC and JICA.

6-4. The trailers are less prioritized in order to promote local industries and to reduce subsidies. The Bhutanese promised to procure trailers from local manufacturers or neighboring countries with quality inspection by AMC to meet the demand of farmers if the trailers are rejected.

6-5. The Bhutanese side explained that the sales proceeds of spare parts after closure of the earlier accounts would be deposited into the 2KR 2008 account to help to fulfill the obligatory amount. The Bhutanese side promised that the budgetary allotment would be arranged to fulfill the obligatory requirement.

List of ANNEX

ANNEX-I	Japanese Grant Assistance for the Food Security Project for Underprivileged Farmers
ANNEX-II	Distribution System under 2KR
ANNEX-III	Guideline/Criteria for Distribution and Monitoring of Power Tillers
ANNEX-IV	2KR Counterpart Fund Status
ANNEX-V	Estimation of Potential Demand of Power Tillers for Mechanization

Japanese Grant Assistance for the Food Security Project for Underprivileged Farmers
(2KR)

1. Japanese 2KR Program

1-1. Main objectives of Japanese 2KR Program

Many countries in the developing world face chronic food shortages. Reduced yields due to factors such as harsh climate and harmful pests are a serious problem. A fundamental solution to the food problems in developing countries requires, above all, an increase of food production through self-reliant efforts on the part of such countries.

To cooperate with the efforts of developing countries to achieve sufficient food production, the Government of Japan has been extending program for the Increase of Food Production (Japanese 2KR Program) since 1977.

2KR aims at providing fertilizer, agricultural machinery & equipment and others to assist food production programs in developing countries which are striving to achieve self-sufficiency in food.

The Government of Japan decided to focus on underprivileged farmers and small scale farmers as a target of the 2KR program and has changed the name of 2KR from “Grant Aid of Increase of Food Production” to “Japanese grant assistance for the food security project for underprivileged farmers” to contribute to eradication of hunger through this program more effectively.

1-2. Counterpart fund

The Government of the recipient country or the designated authority (herein after referred to collectively as “the Authority”) shall deposit, in principle in Bhutanese currency, all the proceeds from the sales and the lease of the products in an account to be opened in its name in Bhutan National Bank or a bank to be agreed upon between JICA and the Authority. The amount of the proceeds to be deposited shall be more than half (1/2) of the Free On Board (FOB) price of the products and shall be calculated based on the average exchange rate of <date of E/N signature> which the International Monetary Fund (IMF) is notified of, unless otherwise agreed between JICA and the Authority. The deposit shall be made within the period of four (4) years from the date of entry into force of the Grant Agreement (hereinafter referred to as “the G/A”), unless otherwise agreed between JICA and the Authority.

The Government of the recipient country shall utilize the fund deposited (hereinafter referred to as “the Counterpart Fund”) for the purpose of economic and social development, including, inter alia, support to underprivileged farmers in the recipient country. In particular, prioritized usage of the Counterpart Fund for assistance for underprivileged farmers and small scale farmers is recommended. Therefore 2KR can have double benefits; through direct procurement of agricultural input under the Grant Assistance and through the Counterpart Fund to support local development activities.






2. Procedures and Standard Implementation Schedule of 2KR

The standard procedures of 2KR are as follows

Application	(Request made by a recipient country)
Study	(Preparatory Study conducted by JICA)
Appraisal & Approval	(Appraisal by the Government of Japan and Approval by the Cabinet)
Determination of Implementation	(The Notes exchanged between the Governments of Japan and the recipient country)
Grant Agreement	(Agreement concluded between JICA and the Authority)
Agent Agreement	(Conclusion of an Agent Agreement with the Agent and the approval of the Agent Agreement)
Tendering & Contracting	
Shipment & Payment	
Confirmation of the arrival of products	

Detailed descriptions of the steps are as follows.

2-1. Application (Request for 2KR)

To receive 2KR, a recipient country has to submit a request to the Government of Japan. A request for 2KR is made by filling out the 2KR application form which is sent annually to potential recipient countries by the Government of Japan.

2-2. Study, Appraisal and Approval

JICA will dispatch the preparatory study mission to countries which could be recipient country of that fiscal year. The study includes:

- 1) Confirmation of background, objectives and expected benefits of the project
- 2) Evaluation of suitability of the project for the 2KR scheme
- 3) Recommendation of project components
- 4) Estimation of program cost
- 5) Preparation of a report

The following points are given particular importance when a request is studied:

- 1) Usage of agricultural input requested
- 2) Consistency of the project with national policy and/or plan of assistance for underprivileged farmers and small scale farmers
- 3) Distribution plan of agricultural input requested
- 4) Introducing the external audit system on the Counterpart Fund
- 5) Holding liaison meetings
- 6) Consultation with stakeholders in the process of 2KR
- 7) Prioritized usage of the Counterpart Fund for assistance for underprivileged farmers and small scale farmers

The Government of Japan appraises the project to see whether or not it is suitable for 2KR based on the study report prepared by JICA and the results of its appraisals are then submitted to the Cabinet for approval.

After approval by the Cabinet, the Grant Assistance becomes official with the Exchange of Notes (hereinafter referred to as “the E/N”) signed by the Government



of Japan and the Government of recipient country (hereinafter referred to as “the Recipient”). Simultaneously, the Grant will be made available by concluding the G/A between the Authority and JICA.

2-3. Procurement Methods and Procedures after the E/N and the G/A

The details of procedural steps involved after signing of the E/N and the G/A and up to the payment stage are described as follows:

(1) Procedural details

Procedural details on the purchase of the products and the services under 2KR are to be agreed upon between the Authority and JICA at the time of the signing of the G/A.

Essential points to be agreed upon are outlined as follows:

- a) JICA is in a position to expedite the proper execution of the program.
- b) The products and services shall be procured in accordance with JICA’s “Procurement Guidelines of the Project for Underprivileged Farmers (Type I-2K)”.
- c) The Recipient shall conclude an employment contract (hereinafter referred to as “the Agent Agreement”) with the procurement agent (hereinafter referred to as “the Agent”).
- d) The Recipient shall designate the Agent as the representative acting in the name of the Recipient concerning all transfers of funds to the Agent.

(2) Focal Points of “Procurement Guidelines of the Project for Underprivileged Farmers (Type I-2K)”

a) The Agent

The Agent is the organization which provides procurement services of products and services on behalf of the Recipient according to the Agent Agreement with the Recipient. In addition to this, the Agent is to serve as the Recipient’s adviser and secretariat for the consultative committee between JICA and the Recipient (hereinafter referred to as “the Committee”).

b) Agent Agreement

The Recipient will conclude an Agent Agreement, in principle within two (2) months after the date of entry into force of the G/A, with the Agent in accordance with “G/A”.

After the approval of the Agent Agreement by JICA in a written form, the Agent will conduct services referred to paragraph c) below on behalf of the Recipient.

c) Services of the Agent

- 1) preparation of specifications of products for the Authority.
- 2) preparation of tender documents.
- 3) advertisement of tender.
- 4) evaluation of tender.
- 5) submission of recommendations to the Authority for approval to place order with suppliers.



- 6) receipt and utilization of the fund.
- 7) negotiation and conclusion of contracts with suppliers.
- 8) checking the progress of supplies.
- 9) providing the Authority with documents containing detailed information of contracts.
- 10) payment to suppliers from the fund.
- 11) preparation of semi-annual statements to the Authority and JICA.

d) Approval of the Agent Agreement

A copy of the Agent Agreement shall be submitted to JICA by the Agent. JICA confirms whether or not the Agent Agreement is concluded in conformity with the G/A and the Procurement Guidelines of the Project for Underprivileged Farmers, and approves the Agent Agreement.

The Agent Agreement concluded between the Recipient and the Agent shall become eligible for the Grant and its accrued interest after the approval by JICA in a written form.

e) Payment Methods

The Agent Agreement shall stipulate that “regarding all transfers of the fund to the Agent, the Recipient shall designate the Agent to act on behalf of the Recipient and issue a Blanket Disbursement Authorization (hereinafter referred to as “the BDA”) to conduct the transfer of the fund (hereinafter referred to as “the Advances”) to the Procurement Account from the Recipient Account.”

The Agent Agreement shall clearly state that the payment to the Agent shall be made in Japanese yen from the Advances and that the final payment to the Agent shall be made when the total remaining amount become less than three percent (3 %) of the Grant and its accrued interest, excluding the Agent’s Fees.

f) The Products and the Services Eligible for Procurement

The products and the services to be procured shall be selected from those defined in the G/A.

The quantity of each product and service to be procured shall not exceed the limits of the quantity agreed upon between the Recipient and the Government of Japan.

g) Supplier

In principle, a supplier could be of any nationality as long as the supplier satisfies the conditions specified in the tender documents.

h) Method of Procurement

In implementing procurement, sufficient attention shall be paid so that there is no unfairness among tenderers who are eligible for the procurement of products and services.

For this purpose, competitive tendering shall be employed in principle.

i) Type of Contract

The contract shall be concluded on the basis of a lump sum price between



the Agent and the Suppliers.

j) Size of Tender Lot

If a possible tender lot may be technically and administratively divided and such a division is likely to result in the broadest possible competition, the tender lot should be divided into two or more. On the other hand, in the interest of obtaining the broadest possible competition, any one lot for which a tender is invited shall, whenever possible, be of a size large enough to attract tenderers.

If more than one lot is awarded to the same contractor, the contracts may be combined into one.

k) Public Announcement

Public announcement shall be carried out in such a way that all potential tenderers will have fair opportunity to learn about and participate in the tender.

The invitation to prequalification or to tender shall be publicized at least in a newspaper of general circulation in the recipient country (or neighboring countries) or in Japan, and in the easily accessible webpage operated by the Agent.

l) Tender Documents

The tender documents should contain all information necessary to enable tenderers to prepare valid offers for the products and services to be procured for 2KR.

The rights and obligations of the Recipient, the Agent and the Supplier of the products and services should be stipulated in the tender documents to be prepared by the Agent. Besides this, the tender documents shall be prepared in consultation with the Recipient.

m) Pre-qualification Examination of Tenderers

The Agent may conduct a pre-qualification examination of tenderers in advance of the tender so that the invitation to the tender can be extended only to eligible suppliers. The pre-qualification examination should be performed not to limit the tenderers but to confirm the capability and resources of potential tenderers to perform the particular work satisfactorily and should not hinder the objective of the competitive tending. In this case, the following points should be taken into consideration:

- 1) experience and past performance in contracts of a similar kind;
- 2) property foundation or financial credibility; and
- 3) existence of local offices, etc. to be specified in the tender documents.

n) Tender Evaluation

The tender evaluation shall be implemented on the basis of the conditions specified in the tender documents.

All those tenders which substantially conform to the technical specifications, and are responsive to other stipulations of the tender documents, shall be opened and judged in principle on the basis of the submitted price, and the tenderer who offers the lowest price shall be designated as the successful tenderer.

The Agent shall prepare a detailed tender evaluation report clarifying the reasons for the successful tender and the disqualification, and submit it to the Recipient to obtain confirmation before concluding the contract with the successful tenderer.

The Agent shall submit a detailed evaluation report of tenders to JICA for its information, while the notification of the results to the tenderers will not be premised on the confirmation by JICA.

o) Additional Procurement

If the Recipient may request an additional procurement by using the Remaining Amount after competitive and / or selective tendering and / or direct negotiation for a contract, the Agent is allowed to conduct an additional procurement, following the points mentioned below:

1) Procurement of the same products and services

The additional procurement may be implemented by a direct contracting with the successful tenderer of the initial tender when a competitive tendering is judged to be disadvantageous or uneconomical in such cases where the products and services to be additionally procured are identical with the initial tender and also the quantity to be additionally procured is limited, or there was no other participants than the successful tenderer in the initial tender.

When a direct contracting with the same supplier is not necessarily advantageous or appropriate in such case where a portion of the balance is relatively large, suppliers shall be selected through a new tendering procedure.

2) Other procurements

When products and services other than those mentioned above in 1) are to be procured, the procurement shall be implemented in principle through a competitive tendering. In this case, the products and services for additional procurement shall be selected from among those in accordance with the G/A.

p) Conclusion of the Contracts

In order to procure products and services in accordance with the G/A, the Agent shall conclude Contracts with the Supplier selected by tendering or other methods.

q) Terms of Payment to the Supplier

The Contract shall clearly state the terms of payment.

In principle, payment shall be made after the completion of the shipment of the products and the completion of the services stipulated in the Contract.

3. Undertakings by the Recipient

The Recipient will take necessary measures:

- 1) to ensure prompt unloading and customs clearance at ports of disembarkation in the recipient country and internal transportation therein of the products purchased under 2KR.
- 2) to ensure that customs duties, internal taxes and other fiscal levies which may be imposed in the recipient country with respect to the purchase of the products and the services as well as the employment of the Agent be exempted.
- 3) To ensure that the products purchased under 2KR will make an effective contribution to the increase of food production and eventually to stabilize and develop the recipient country's economy.
- 4) To give sufficient consideration to underprivileged farmers and small scale farmers as beneficiary of the project.
- 5) To bear all the expenses, including the expenses for the storage and the distribution of the products, other than those covered by the Grant and its accrued interest, necessary for the implementation of 2KR.
- 6) To maintain and use the products procured under 2KR properly and effectively for the implementation of 2KR.
- 7) To introduce the external audit system on the Counterpart Fund.
- 8) To give priority to projects for small scale farmer and poverty reduction for the use of the Counterpart Fund.
- 9) To monitor and evaluate the progress of 2KR and to submit a report to JICA twice a year.

4. Consultative Committee

4-1. The purpose of establishment on the Consultative Committee

The Authority will establish a consultative committee (hereinafter referred to as "the Committee") in order to discuss any matter, including deposit of Counterpart Fund and its usage, for the purpose of effective implementation in the recipient country. The Committee will meet in principal in the recipient country at least once a year.

4-2. The member of the Committee

The Committee shall be chaired by the head of the representatives of the Authority. The representatives of JICA and the representatives of the Authority shall be members of the Committee.

4-3. Other participants

The representative of the Agent will be invited to the Committee provides advisory service to the Authority and work as the secretariat of the Committee. The role of the secretariat will be such as collecting information related to the 2KR, preparing the material for discussion and making the Record of Discussion on the Committee.



4-4. Terms of Reference of the Committee

The subject centered on the below shall be discussed in the Committee.

- 1) to confirm an implementation schedule of 2KR for the speedy and effective utilization of the Grant and its accrued interest;
- 2) to discuss the progress of the sales, lease, distribution and utilization of the products;
- 3) to exchange views on allocations of the Grant and its accrued interest as well as on potential end-users;
- 4) to identify problems which may delay the utilization of the Grant and its accrued interest, and to explore solutions to such problems;
- 5) to evaluate the effectiveness of the utilization in the recipient country of the products in increasing production of staple food crops;
- 6) to assist in formulating a policy on the deposit, in principle in the recipient country's currency, and to exchange views on the effective utilization of the Counterpart Fund;
- 7) to exchange views on publicity related to the utilization of the Grant and its accrued interest; and
- 8) to discuss any other matters that may arise from or in connection with the G/A.

5. Liaison Meeting


5-1. The purpose of the Liaison Meeting

JICA and the Recipient will hold the Liaison Meeting twice a year for the periodical monitoring of the project. The Recipient will make a monitoring report and submit it to JICA before/in the Liaison Meeting. The detailed way to meet the Liaison Meeting will be discussed on the occasion of the 1st Committee.

5-2. Terms of Reference of the Liaison Meeting

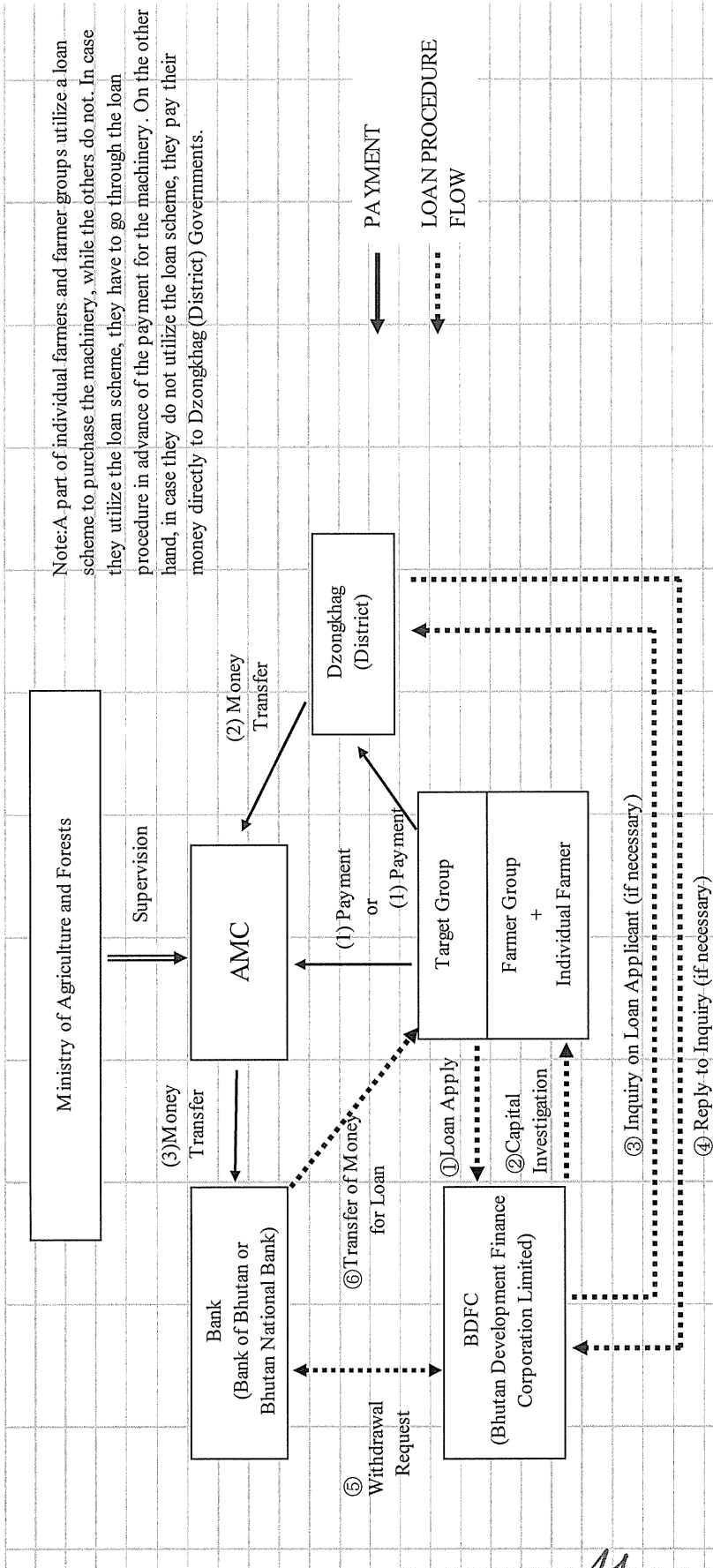
The subject centered on the below shall be discussed in the Liaison Meeting.

- 1) To discuss the progress of distribution and utilization of the products in the recipient country purchased under 2KR.
- 2) To evaluate the effectiveness of utilization of the products in the recipient country for food production and assistance for small scale farmer and poverty reduction.
- 3) In case there are some problems (especially the delay of distribution and utilization of the products and deposit of the Counterpart Fund), opinion exchanges for solving such problems, progress report of implementation of countermeasures by the Recipient, suggestion by the Japanese side, shall be done in the Liaison Meeting.
- 4) To confirm and report the deposit of the Counterpart Fund
- 5) To exchange views on the effective utilization of the Counterpart Fund
- 6) To discuss the promotion and the publicity of the projects financed by the counterpart fund.
- 7) Others



Distribution System under 2KR

1. Distribution Flow



Note: A part of individual farmers and farmer groups utilize a loan scheme to purchase the machinery, while the others do not. In case they utilize the loan scheme, they have to go through the loan procedure in advance of the payment for the machinery. On the other hand, in case they do not utilize the loan scheme, they pay their money directly to Dzongkhag (District) Governments.

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Guidelines/Criteria for Distribution and Monitoring of Power Tillers

A. Objective of Farm Mechanization and Power Tiller Distribution

The main objective of farm mechanization efforts are to;

- Increase agriculture production by bringing more agriculture land under cultivation.
- Relieve farm labor shortages
- Decrease rural poverty

B. Selection of eligible farmer's group and individual farmer for grant machines

The Dzongkhags Power Tiller Allotment Committee (DPTAC) will consider the following criteria/factors:

1. All the application should be endorsed by the Agriculture Extension Officer and the Gup of respective gewogs.
2. Existing functional farmers' group who has clear agriculture production and development plan will be given 1st priority. While the new farmers' group formed with an intention to share power tiller will be given 2nd priority.
3. The Chairman/Chairwomen of the group will apply on behalf of the group with written consent of the group members. The applicant should attach following documents along with the application.
 - Clear utilization plan of the power tiller. The utilization plan should be only for agriculture purposes.
 - Clear and agreed bylaws by the members that specifies ownership and use
 - Proof that the land holding size of each member is more than 2 acres of applicable agriculture land in his/her village/gewog (Produce Lag Thram copy)
4. An individual applicant, who has census in the Dzongkhag, and has minimum of 2.5 acres of applicable land in his/her village/geog only, not in other geogs/dzongkhags (Produce Lag Thram copy) will be given 3rd priority.
5. If the individual applicant is woman headed household and in particular who has no capable male counterparts to engage in farming works, she will be given priority. The selection of a farmer for individual allotment will be favored by his probability of benefiting other farmers by way of providing hire services.

6. Gewogs and communities which are linked by feeder/farm roads recently or having road access for the first time will be given preferential priority.
7. The Gup and the Extension Officer will also assess agriculture commercialization opportunities and OGTP potentials.

C. Field Verification

8. The DPTAC will verify all the application and supporting documents to screen out non eligible farmers' group and individual farmers.
9. The DPTAC will, if required, carry out site visit to the applicant's field to confirm farm mechanization opportunities and potentials (land gradient/slope, acreage, spill over benefits to other farming households etc.)

D. Allotments

10. After fulfilling all the criteria, the DPTAC will allot the power tillers to the groups or individual
11. Straightforward allotment of power tillers through lottery draw will be discouraged. However, lottery draw will be affected if there are more eligible applicants (groups or individuals) than the total number of power tillers allotted to the dzongkhag.
12. An individual applicant owning power tiller/tractor even by his/her family members in the same "Gung" or any member of a group applicants who owns currently or has received a power tiller/tractor within the last 10 years will not be eligible.

E. Payment

13. A Farmers' Group or an individual must pay for the machine in cash before the notified deadline to the Dzongkhag Agriculture Officer. Physical allocation of the machine will be done only if "letter of payment" is produced.
14. In case the person fails to lift the power tiller by the aforesaid deadline, the machine will be pooled for the allotment to the next applicant by the DPTAC.

F. Obligation of the Farmer's Group or Individual (Beneficiary)

15. The Farmers' Group or an individual, after having been allotted a power tiller will ensure proper use of the machine.
16. The use of power tiller will be only for agriculture purposes.



17. The farmers' group and individual will ensure that the power tillers are not hired out to construction industry (construction of commercial buildings/pavement or black topping of the national highway).
18. The Farmer's Group or the individual will **not sell, transfer or hire out** power tillers to other persons' name or to other Dzongkhags.
19. The farmers' group or individual can however hire out to other farmers within geogs/dzongkhags for the purpose of farming and farm related activities.

G. Agreement

20. Tripartite agreement between the Farmers' Group/Individual, the DPTAC and the Agriculture Machinery Centre (AMC) will execute written agreement in consonance to above points.

H. Monitoring

21. The Extension Officer at the geog level will maintain proper records of power tillers sold and will monitor the use/misuse of power tiller and report to the Dzongkhag Committee.
22. The Extension Officer will also ensure that power tillers are not sold to other individuals or transferred to other Dzongkhags
23. The Extension Officer will submit quarterly report to the Dzongkhag Committee on the status (use and whereabouts) of the power tiller
24. The Dzongkhag Agriculture Officer, who will serve as Member Secretary of the DPTAC will submit biannual report to the Agriculture Machinery Centre
25. The Agriculture Machinery Centre will compile and produce annual report.

I. Forfeiture of Power tiller

26. If the Farmers' Group or an individual is found to have misused the power tiller according to points underlined under the "**Obligation of the Farmer's Group and Individual**", the Ministry of Agriculture and Forest will have the right to forfeit power tiller and allocate to other potential farmers or impose fines as deemed appropriate or withdraw all the subsidies to the group or individuals.

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2KR Counterpart Fund Status

Fiscal year	EIN amount		FOB amount (JPY)	Obligated ratio to FOB amount	Exchange rate			Expected deposit (Nu)	Deposit amount (Nu)	Rate of deposit (%)	Expenditure amount (Nu)	Balance (Nu)		EIN or GIA signature date	Limit of deposit time*1
	(Million JPY)	(Nu)			(JPY/USD)	(Nu/USD)	(Nu/JPY)					Bank of Bhutan (BOB)	Bhutan National Bank (BNB)		
1984 to 1997	3,375	683,192,500	2,840,530,449				379,072,732.66	390,260,599.77	103.0	390,260,599.77	---	---	---	---	---
1999	300	127,050,000	257,962,387	2/3	106.71	43.589	70,248,477.10	74,179,538.08	105.6	74,179,538.08	---	---	---	10-Mar-00	9-Mar-04
2000	200	85,600,000	1,54,606,389	1/4	117.10	46.540	15,361,616.87	18,729,988.91	121.9	18,729,988.91	---	---	---	11-Jan-00	10-Jan-05
2001	400	165,200,000	317,620,182	1/4	118.98	47.646	31,798,056.80	35,017,973.00	110.1	35,017,973.00	---	---	---	12-Sep-01	10-Sep-05
2002	400	158,200,000	326,669,891	1/4	119.79	47.378	32,300,204.72	37,425,074.56	115.9	37,425,074.56	---	---	---	7-Apr-03	6-Apr-07
2004	300	124,356,000	238,499,709	1/4	105.31	43.653	24,715,667.55	27,556,249.00	111.5	15,270,734.67	---	12,285,514.33	12,285,514.33	9-Mar-05	8-Mar-09
2006	240	88,248,000	183,146,274	30%	120.58	44.333	20,200,921.63	21,162,502.13	104.8	0.00	---	21,162,502.13	21,162,502.13	24-Jan-07	23-Jan-11
2007	210	73,794,000	155,439,370	30%	112.25	39.440	18,391,586.26	18,391,587.00	100.0	0.00	18,391,587.00	---	18,391,587.00	21-Dec-07	20-Dec-11
2008	180	94,069,071	144,198,315	1/2	98.16	51.299	37,679,448.66	9,492,560.00	25.2	0.00	9,492,560.00	---	9,492,560.00	13-Mar-09	12-Mar-13
Grand Total	5,605	1,599,709,571	4,618,692,966				629,768,712.25	632,216,092.45		570,883,928.99	27,884,147.00	33,448,016.46	61,332,163.46		

Estimation of Potential Demand of Power Tillers for Mechanization

Sl. No.	Dzongkhag	Agricultural Land Wetland (rice)		Maize area ha	Wheat area ha	Tillage*2 potential ha	Agricultural Dry land		Slope*4 coeff. <25 %	Total*5 potential No.	P.T. in use No	P.T.*6 2KR 2008 No	Tractor*7 in use No	Tractor*8 Non-pro. No	Estimated demand*9 No.	Based on estimated demand No.	Applied in 2008 No.	Applied*10 number No.	Based on demand and application	poverty index %	
		ha	Tillage*1 potential ha				ha	-Corn -Wheat potential													
1	Bumthang	44	11	9	224	29	4102	3869	193	81.8	191	137	4	47	2	-97	135	131	2	6.6	
2	Chukha	763	191	1858	170	253	5014	2986	149	70.4	418	23	8	4	0	375	26	18	19	14.3	
3	Dagana	1717	429	2702	61	345	4129	1366	68	73.9	623	13	8	1	0	599	37	24	29	21.9	
4	Gasa	76	19	1	66	8	191	124	6	71.4	24	24	3	1	0	-6	0	54	2	2.1	
5	Haa	73	18	181	291	59	1254	782	39	74.4	87	30	4	0	0	53	3	69	6	10.5	
6	Lhuntsi	653	163	869	18	111	1389	502	25	60.0	180	15	6	1	0	156	10	17	11	32.2	
7	Mongar	475	119	3447	217	458	4025	362	18	62.4	371	46	12	4	1	298	18	35	23	34.4	
8	P/gatsel	115	29	2384	33	302	4498	2081	104	61.7	268	21	8	2	0	233	14	16	11	18.5	
9	Paro	1101	275	69	448	65	2116	1599	80	75.6	317	425	8	16	2	-170	-10	206	1	3.1	
10	Punakha	1885	471	156	421	72	587	10	1	71.3	388	297	9	5	2	61	4	631	32	9.8	
11	S/jongkhar	664	166	2132	45	272	4063	1886	94	71.5	381	6	8	0	4	355	22	14	17	31.7	
12	Samtse	3358	839	2998	158	395	9499	6343	317	76.7	1190	14	9	1	5	1149	70	29	55	36	
13	Sarpang	2140	535	2681	19	338	4229	1529	76	76.5	726	54	7	5	4	638	39	11	4	11.8	
14	Trashigang	972	243	2723	83	351	4986	2180	109	69.0	485	80	10	1	0	392	24	32	22	21.8	
15	Tyangtse	550	137	825	12	105	1601	764	38	68.6	192	10	6	0	0	176	11	20	14	9.7	
16	Thimphu	172	43	13	84	12	484	387	19	74.8	56	26	4	14	2	-22	-1	70	2	1.4	
17	Trongsa	488	122	393	188	73	1092	511	26	63.6	140	58	4	2	1	69	4	51	47	14.4	
18	Tsirang	1646	412	2186	53	280	3255	1016	51	69.8	518	15	8	2	1	486	30	33	25	9.7	
19	W/phodrang	1775	444	135	540	84	1434	759	38	69.1	391	341	10	27	2	-47	-3	86	76	9.6	
20	Zhemgang	609	152	1466	57	190	2666	1143	57	61.7	247	27	6	3	0	205	13	29	23	43.6	
		19276	4819	27227	3188	3802	60613	1510	7192	1662	142	136	26	136	4902	300	1588	1446	300	1446	300

* Statistical data are based on the Renewable and Natural Resources Census 2009. The shaded Dzongkhag are the prioritized for rice production.

*1 One power tiller is assumed to cover 10 acres (4ha) in one season for paddy field preparation

*2 One power tiller is assumed to cover 20 acres (8ha) in one season for upland tillage and cultivation

*3 One power tiller is assumed to cover 50 acres (20ha) in one season for upland cultivation and transportation

*4 Slope coefficient is calculated to sum the percentage of slopes up to 25%

*5 Total potential is calculated to sum the above demand multiplied by the slope coefficient

*6 Power tillers by 2KR 2008 are 152 units. Ten units are used for experiments and educational purposes

*7 One tractor is assumed to have its field performance of three units of power tillers

*8 Tractors by Non-programme grant are 35 units. Nine units are used for experiments and educational purposes.

*9 Estimated demand is calculated deducting power tillers and tractors(1 tractor = 3units of power tiller) from total potential.

*10 Applied number means applicants deducted 142 units of 2KR 2008 from application received at the Dzongkhag offices

* Shaded application number shows the Dzongkhags require more applications from farmers to meet natural potential for mechanization.

2. 収集資料リスト

- (1) MOAF "Agricultural Statistics 2009, Volume 1", DOA <Original>
- (2) MOAF "High lights from 2007 to 2008" , DOA <Original>
- (3) MOAF "Agricultural Development Highlights for the Year 2008- 2009" ,
DOA <Original>
- (4) MOAF "Guideline For Road Development", May 2009, DOA <Original>
- (5) MOAF Brochure of Agricultural Machinery Centre –Second Edition-, DOA,
<Original>
- (6) DOR Map of Bhutan Road Network as of 24/11/2010 <Print copy>
- (7) DOR Inventory of Road Network as of June 2010 <Soft data>

3. ヒアリング結果

耕耘機使用農家（グループ）ヒアリング調査集計表

訪問日	11月22日			11月24日	
県名	ティンブー			パロ	
Geog	Namselling	Bonday	Changkar	Donkze Dhangkha	Lholing, Shaba
面談者	Mr. Sangay Dorji	Mr. Taku	Mr. Chencho Norbu	Mr. Gyeltshen	Mr. Rotay
耕耘機	弥 ^タ SK120	弥 ^タ		弥 ^タ 2006	弥 ^タ
使用年数	12年。ただし中古を2009年にN.9,500で売却して、新品を購入した	2008年購入（2年間）	8年間	2008年購入（2年間） N.112,000 1987年に購入し、20年利用した中古はN.27,000で売却	9年間 その他に弥 ^タ 製脱穀機（6年前購入）とベトナム製リーパー（3年前購入）を所有。脱穀機は中古（当時4年使用）を他の農家から、リーパーは民間業者から購入。リーパーは故障中（弥 ^タ 製に比べて品質落ちる）。
参加組織					
耕作面積(acre)	0.25+1.5	2	4.5	7.5（14-15圃場）	水田：2.5、畑：0.5
上記内借り地	1.5acre	-	-	-	0.5貸してる
借り賃	650kg粃/1.5acre				貸し賃：260kg粃
栽培作物	コメ、野菜（ジャガイモ、トウガラシなど）	コメ、コムギまたはジャガイモ、リンゴの木100本	夏：コメ+野菜 冬：ジャガイモ/コムギ/裸麦 リンゴの木：70本	コメ、野菜 コムギ・裸麦→飼料	夏：コメ 冬：コムギ+豆
収量 (t/ha)	コメ：2.4~1	コメ：3.25		コメ：39	コメ：3 コムギ：1
栽培暦	1	2	3	4	5
販売価格 (N/kg)	コメ：35			コメ：46	
主たる収入源	賃労働	リンゴ			賃耕+精米
耕耘機能力 (/acre)	耕起：2日 耕耘：1日	耕起：1日 耕耘：1日（2回）	耕起：1日 耕耘：1日（2回）	耕起：1日 耕耘：1日（2回） ポンプ：3日	
その他の用途	輸送	輸送（堆肥・製品・薪など）	輸送（堆肥・製品・薪など）	輸送（堆肥・製品・薪など）	輸送（堆肥・製品・薪など）
年間使用日数		40-50	農作業：10 輸送：30 機械サービス：40	90	農作業：30 輸送：20 計 45-60
耕耘機による収入	1時間の耕耘機使用料=3日間の労賃（<3食+N.100> x 3日）		耕起：N.1,500/日（8時間） 耕耘（代播）：同上 輸送：N.1,500/日またはN250/時間	耕起・耕耘：N.1,500/日（6acre/年請負） 輸送：N.160/時 小型ハーベスターでの請負：N.4,800/acre-日 人力なら10人 x @300=N.3,000(食事付き) 15acre/年請負	耕起・耕耘：N.1,500/日 輸送：N.1,000/日、N.200/1トン・時間 脱穀：N.600/時 ポンピング：N.200/時間 リーパー（収穫）：N.300/時間 精米：処理量の0.5% 粃（20kg→1kg）
ディーゼル消費量 (liter)	5/日（8時間）		耕起：4/acre-day 耕耘：3/acre-day 輸送：0.1/km		
価格/liter	N.37-38				
部品購入先/メンテナンス年額	AMC/N.16,000	AMC	SP注文経験無し 修理費：N.1,500+α/年	AMC/N.5,000	大きな問題はないが、年々修理費は上昇する
運転技術	1984年AMCで受講		AMCで受講		
修理方法	自分で直せない時は、AMCの技術者に来てもらう				
購入資金源 (%)は金利/月				50%をBDFCから借入 3年間(13)	
主問題			人手不足	人手不足	若者が後を継がない

訪問日	11月27日	11月28日	11月29日	11月30日	11月30日
県名	ウブナグアツ	モンガル	モンガル	タシガン	タシガン
Geog	Daugchu	Seling	Mongar	Kaunglung	Kaunglung
面談者	グループ (5農家)	グループ (23農家)	酪農グループ (27農家)	Mr. Achola	Mr. Sandrup
耕耘機	赤タ	赤タ	赤タ	赤タ	赤タ
使用年数	グループ所有 (2年間) 5人のメンバーの内 運転手は1人	グループ所有2002年 購入 (8年間) その他に①サイロ (トウモロコシ貯蔵)、 ②製粉機、③精米 機、④トウモロコシ圧 扁機を所有	グループ所有 (9年間) 毎日のモンガル市 内への牛乳の出荷 に主として利用さ れている。	10年間	2003年購入 7年間
参加組織	グループ	グループ	グループ		
耕作面積(acre)	畑：15	水田：57.5、畑は傾 斜が強く機械化 不可	畑：約20acre (全体 200acreほどある が) 傾斜が強く て、機械化でき るところは少なく、 耕起に時間も掛 かる	畑：14	水田：1 畑：2.5
上記内借り地 借り賃		僧院から借用 生産物の40%			
栽培作物	ジャガイモ (夏)、コムギ(冬) が中心。様々な野 菜の生産	水田はコメ中心	牧草、トウモロコ シ、野菜	ジャガイモ、トウ モロコシ	水田：コメ 畑：ジャガイモ、 トウモロコシ
収量 (t/ha)					コメ：3.25 ジャガイモ：5 トウモロコシ：7.5
栽培暦	6		7	8	9
販売価格 (N/kg)					
主たる収入源	野菜類+ジャガイモ		乳製品+野菜	ジャガイモ	ジャガイモ
耕耘機能力 (/acre)		耕起：1日 耕耘：1日 (2回)		耕起：1日 耕耘：半日	耕起：1日 耕耘：半日
その他の用途				輸送 (堆肥・製 品・薪など)	
年間使用日数	農作業：60 輸送：各週末2日。 10数キロ離れた市 場へ野菜を運ぶ	農作業：120 輸送：3回 (市場ま で) /月ほか60~90	農作業：30 輸送：牛乳配送 (毎日) モンガル 市場へ野菜を運ぶ (週末)	農作業：30 輸送：3回 (市場ま で) /月ほか60~90	農作業：10 輸 送：40~50
耕耘機による 収入	輸送：N.200/時間	耕起・耕耘：N.200/ 時 (N.250) 輸 送：N.50/km (N.150- 200) 動力サー ビス： ①製粉 機：1.5kg/12kg ②精米：1kg/12kg ③圧扁機：Nu.5/原 料1.5kg * 上記 () 内はメ ンバー外農家の場 合	耕起：N.1,500/日輸 送：モンガル往復 N.300/トレーラー (毎朝牛乳輸送) 乗客→モンガルま で：N.50/人	耕起：N.170/時 耕耘：N.200/時	耕起：N.120/時 耕耘：N.160/時 輸送：<ジャカイト> N.15/50kgBag最寄 りの町まで(13km)
ディーゼル消費量 (liter)	農作業：9/acre-day 輸送：1/5km	農作業：9/acre-day	農作業：9/acre-day 輸送：1/5km		
価格/liter	N.39		N.39		
部品購入先/メン テナンス年額		N.15,000	N.3,000 しかし大きな事故 が起ると出費が かさむ。	N.2,500	N.2,500
運転技術	AMCで受講		AMCで受講		
修理方法	追突と傾斜地での 横転の自己のみ。 簡単な修理は近隣 の機械を持っている 農家で直せる。		転倒事故の時は、 カンマのRAMCま で運んで修理した (費用：N.13,000)。	転倒してRAMCで 修理してもらった (費用：N.5,000)	
購入資金源 (%)は金利/月		BDPCからグループ全 員で借金 3年間(13)			
主問題		急傾斜	急傾斜		

栽培暦 (カレンダー)

凡例： 圃場準備/苗代+ 播種/移植 生育期 収穫

No.: 1

品種等	月												備考	
	1	2	3	4	5	6	7	8	9	10	11	12		
コメ														
裏作														(ジャガイモ/ジャガイモ)
機械作業														作業期間
耕起														4.5日/2回- (2回)
代掻き														2日/2回-

No.: 2

品種等	月												備考	
	1	2	3	4	5	6	7	8	9	10	11	12		
コメ(ジャガイモ)														
コメ(中国米)														
裏作														(ジャガイモ/ジャガイモ)
機械作業														作業期間
耕起														2日/2回- (2回)
代掻き														1日/2回-

No.: 3

品種等	月												備考	
	1	2	3	4	5	6	7	8	9	10	11	12		
コメ														
裏作														(ジャガイモ)
機械作業														作業期間
耕起														2日/2回- (2回)
耕耘														1日/2回- (2回)
代掻き														1日/2回-

No.: 4

品種等	月												備考	
	1	2	3	4	5	6	7	8	9	10	11	12		
コメ														
裏作														(ジャガイモ)
機械作業														作業期間
耕起														2日/2回- (2回)
耕耘														1日/2回- (2回)
代掻き														1日/2回-

No.: 5

品種等	月												備考	
	1	2	3	4	5	6	7	8	9	10	11	12		
コメ														3回-
機械作業														作業期間
耕起														4.5日
耕耘														6.5日
代掻き														

No.: 6

品種等	月												備考	
	1	2	3	4	5	6	7	8	9	10	11	12		
コムギ														
ジャガイモ														
機械作業														作業期間
耕起														
耕耘														

No.: 7

品種等	月												備考	
	1	2	3	4	5	6	7	8	9	10	11	12		
トウモロコシ														
機械作業														作業期間
耕起														2日/2回- (2回)
耕耘														1日/2回- (2回)

No.: 8

品種等	月												備考	
	1	2	3	4	5	6	7	8	9	10	11	12		
トウモロコシ														
ジャガイモ														
機械作業														作業期間
耕起														2日/2回- (2回)
耕耘														1日/2回- (2回)

No.: 9

品種等	月												備考	
	1	2	3	4	5	6	7	8	9	10	11	12		
コメ														1回-
ジャガイモ														2回-
トウモロコシ														
機械作業														作業期間
耕起														1.5日 x 2
耕耘														2日
代掻き														

