Annex C

Republika ng Pilipinas

Pambansang Pangasiwaan ng Patubig

(NATIONAL IRRIGATION ADMINISTRATION)

Lungsod ng Quezon

OFFICE ADDRESS: NATIONAL GOVERNMENT CENTER
E. DE LOS SANTOS AVENUE
QUEZON CITY PHILIPPINES

TELEPHONE NOS.: 97-40-71 to 78
CABLE: NIAPHIL
TELEX: 42902 NIA PM

OUR REFERENCE:

M.C. No. 63 S. 1990

MEMORANDUM TO: The Regional Irrigation Managers
Provincial Irrigation Engineers
Project Managers of CARP-IC and
CIDP-CIDIP and other Communal Projects
All others concerned

SUBJECT : BASIC CRITERIA FOR SELECTION OF COMMUNAL IRRIGATION PROJECTS

Effective in January 1991, all communal irrigation projects/systems proposed for implementation should pass the selection criteria as outlined in accompanying pages. The adoption of these criteria will enable everybody concerned to observe uniform basis in screening of projects regardless of funding sources.

Previous memoranda inconsistent with this one are superseded and considered revoked.

For compliance.

JOSE B. DEL ROSARIO, JR.
Administrator

September 6, 1990

BASIC GUIDELINES IN PROJECT SELECTION

1. Minimum Selection Criteria

(a) The expected cropping intensity should be at least 130% based on the net irrigable area as estimated during feasibility level. A guideline in net area estimation is shown as Annex 1.

(b) The proposed irrigation system area should have soils and slopes suitable for irrigated crop production.

(c) There should be no conversion of land use from productive permanent crops like coconuts and orchards.

(d) The smallest scheme should serve at least 20 farmers and the largest farmer-managed scheme would be not more than 700 ha. IAs with systems larger than 700 ha will be required to engage full-time professional management. No scheme would be larger than 1,000 ha.

(e) The average farm size in a scheme should be not more than 5 ha.

(f) Farmers should be actively involved in preparing their irrigation project, and should concur with its initial feasibility design.

(g) Average irrigation development cost for each package of schemes considered at any time (say, one year program for each PIO) should not exceed ₱ 18,000/ha for rehabilitation work and ₱ 35,000/ha for new construction. Subject to this average per ha cost, ceilings of ₱ 35,000/ha for rehabilitation work and ₱ 70,000/ha for new construction may be considered. Exceptions to this criterion would be systems in areas suitable for high value crops, for which ceilings of ₱ 55,00/ha for rehabilitation work and ₱ 100,000/ha for new construction would apply, provided the average costs are maintained as stipulated earlier (all at 1990 prices).

(h) The average economic internal rate of return (EIRR) of each of the above mentioned packages of scheme should be not less than 10%.

2. Explanation and Mechanism

(a) In general an average of at least 130% cropping intensity is needed for a farmer to live at threshold income level.

Statistics per region related to cropping intensity against threshold income is shown in Table 1.

The net irrigable area following the guideline in Annex 1 will be adopted in designing project scheme and computation of FOW. Hence a realistic area estimate is very necessary.

Cropping intensity is computed by adding the expected irrigable/irrigated area in wet and dry seasons divided by the net irrigable area (based on the above area estimation).

(b) Soils and slopes are basic considerations in project design. Soil types must be suitably good for irrigated rice, and other cash crops production. Medium to heavy soils are generally required for rice production at a reasonable average slopes (say not more than 15%). Loose soils may be developed for both rice and diversified crops subject to availability of water. In other words, given a suitable type and land grade (slope), crops other than rice are therefore considered in computation of cropping intensity.

(c) Strictly land with productive permanent crops are to be dropped from selection. In some cases however, the farms with permanent crops should be deducted from gross area proposed for development.

(d) The lower limit of area with at least 20 farmers would expand the reach of irrigation development to smaller and more remote schemes as well as to smaller group of farmers which would be relatively easier to organize into stable IAs. On the other hand, large area with more than 700 ha would take longer time to develop the farms and the system as a whole without full assistance of NIA and management of competent IA leaders. Professional managers would come from the IA management.

Inasmuch as communal schemes are classified as those with area of not more than 1,000 ha, the upper limit would be 1,000 ha more or less.

(e) In consideration with new schemes and those found in remote provinces, the average farm size per scheme should not be more than 5 ha.

(f) One of the functions of the PIO in involving the farmer-beneficiaries at design stage is to get their concurrence (at least 80% of total beneficiaries) to develop the subproject considering the net area, plans of diversion and distribution, and cost.

Table 1. ESTIMATED CROPPING INTENSITY OF CIS/CIF AT POVERTY /ABOVE POVERTY THRESHOLD

ITEM	Threshold Income 1_/ P/month 1988=100	Above Poverty Income 2_/	Cropping Intensity at Poverty Threshold 1.5 ha	2.0 ha	3.0 ha	Cropping Intensity Above Poverty 1.5 ha	2.0 ha	3.0 ha
Phil	2,709	3,386	177	141	105	213	168	123
Region 1	2,597	3,246	171	136	102	206	162	119
2	2,576	3,220	170	136	101	204	161	118
3	2,881	3,601	186	148	109	225	177	129
4	2,832	3,540	184	146	108	221	174	127
5	2,443	3,054	163	130	98	195	155	114
6	2,654	3,318	174	139	103	209	165	121
7	2,173	2,716	148	119	90	177	141	105
8	2,263	2,829	153	123	93	183	146	108
9	2,289	2,861	155	124	94	185	147	109
10	2,439	3,049	163	130	98	195	154	114
11	2,713	3,454	180	143	106	217	171	125
12	2,468	3,085	164	131	98	197	156	115

1_/ Minimum average monthly income that a family of 6 members should receive to be considered above poverty, source: CORPLAN

2_/ At about 20% above threshold

Subproject with ROW problems (especially at the upstream up to mid-stream) may not be given priority in development unless the farmers negotiated deed of donation.

(g) At price index of 1990, sample computation of average development cost for a package of subprojects and allowable ceilings area presented as follows:

Province of Ilocos Norte CY-1991 CIDP/CIDIP Projects

Name of Subprojects	Net area (ha)	Overall Program ₱000	Per ha Cost, ₱000	REMARKS
CIP				
1. Sales CIP	25	2,500	100	upper limit for subproject w/ high high value crops
2. Piddeng CIP	75	5,250	70	ceiling for rice producing scheme, CIDP
3. Tartarabang CIP	100	1,000	10	
4. Baay CIP	200	2,500	13	
5. Bacarra	250	4,500	18	
Sub total	650	15,750	24	accepted
CIS (including carry-over scheme)				
6. Maki CIS	35	1,925	55	with high value crops
7. Upi CIS	50	1,750	35	ceiling for CIS
8. Bakod CIS	81	1,000	13	
9. Buled CIS	100	1,000	10	
10. Burma CIS	200	1,500	14	
Sub-total	465	7,175	15	accepted

The average and ceilings of irrigation development cost may be revised in every five years in consideration with price escalation and effects of inflation.

(h) Each subproject should have at least 10% EIRR. In situations where the average family income falls below one-half of the national poverty income level (refer to Table 1) an EIRR threshold of 5% may be adopted, subject to the overall project EIRR threshold and that for each above mentioned package of schemes being maintained at no less than 10%.

Sample Computation of Average EIRR

Name of Subproject	Area	EIRR	REMARKS
1. Salea CIP	25	10	
2. Piddeng CIP	75	5	with very low per capita income
3. Tartarabang CIP	100	25	
4. Baay CIP	200	30	
5. Bacarra CIP	250	15	
6. Maki CIS	35	12	
7. Upi CIS	50	7	with very low per capita income
8. Bakod CIS	60	20	
9. Bulod CIS	75	18	
10. Burnay CIS	105	22	
Total	975	-	
Average	-	19	accepted

Formula:

Weighted average, EIRR = [25(10)+75(5)+... +75(18) + 105(22)] / 975

= 18.97%

= 19%

Annex 1

ESTIMATION OF AREA AT FEASIBILITY LEVEL

DEFINITION

Column 1 - Gross Area

It refers to the total area identified within the boundary using military map, cadastral survey map, land use map or actual survey, if any.

Column 2 - Permanently Unirrigated Area

This includes permanent cropland such as those strictly for coconut, orchard; other area such as residential, road networks, depressions and large waterways, highland/pasureland that are not suitable for irrigated crops, permanently waterlogged area, and the like.

Colum 3 - Currently Irrigated/Irrigable

Currently irrigated means the area actualy irrigated either by pump or gravity. Currently irrigable means the area that are not presently irrigated but can be covered by the scheme if facilities are be provided/repaired without substantial land development.

Column 4 - Additional Potential

It refers to adjacent area which can be covered by extending water distribution canals and provision of facilities . Farms which can be developed by mechanical/ manual grading/terracing can be included in this category.

Column 5 - Total Available For Irrigation

It is the sum of Columns 3 and 4 using all the available information from maps, surveys, etc.

Column 6 - Corrected Total Area

This will become the net area for irrigation after deducting further some areas which could not be possibly covered in Column 5. To arrive at the corrected multiplier(k1), consider the past experience in the province whereby the program area is lower by so many percentage when compared to actual area irrigated or the actual area irrigated when fully land developed. Excluding the area to be left idle by farmers and the area to be occupied by main canals, the percentage of area that can realistically covered by irrigation over a period of time can be estimated. This may range from 80-90 percent of column 5. more or less

There is another method of arriving at correction factor (k1) that can be used in Column 1. Over a period of say 5 years after completion of projects, the service area reduction can be assessed per project per province. Getting the average percentage reduction (actual area irrigated vs. service area at project preparation), for several projects Colum 1 can be multiplied by correction factor to get the corrected total available for irrigation. Based on preliminary evaluation of completed projects correction factor is within the region of 60-90 percent.

Column 1-6 are estimates of area independent of water source.

Column 7 - Area Irrigable Based on Water Availability

In this column, area estimation will be based on water availability. Average water discharge as defined, is the average of so many observations in one month or in one year. Dependable water supply is the amount of discharge that can be utilized considering the occurrence of drought or low-water-availability, say one occurrence in every five (5) years.

Estimation of area based on dependable water supply, climate and rainfall and crop water requirement can be done to arrive at a more realistic figure. This exercise was part of the seminar-workshop provided to all PIO staff by CIDP and FDD personnel. Resulting net/smallest area could still be multiplied by correction factor K2.

K2 refers to reduction of flow over a certain period (more than 5 years). As monitored K2 based on completed CIDP 1 could be 70-90 percent.

Column 9 - Design Service Area

Use the area in either Column 6 or Column 7, whichever is lower.

Column 9 - Rehabilitation

... is activated from time to time especially of O&M stage.

ESTIMATION OF AREA AT FEASIBILITY LEVEL

1	2	3	4	5	6	7		8	9
Gross Area	Excluded Unirrigable Area	Currently Irrigated /Irrigable	Additional Potential	Total Available for Irrigation	Corrected Total Available for Irrigation	Area Irrigable Based on Water Availability *k2 b/		Design Service Area (lesser of:	Firmed-up Area c/
				3 + 4	5 * kl a/	WS	DS		
Per maps, etc	Per maps, etc	Per maps, etc	Per maps, etc	Per maps, etc	Per maps, etc	7a	7b	6 or 7)	Date

Note:

i) a/ To be detemine based on actual experience/ for completed CIS

ii) b/ Review of available information considering reduction of discharge over a certain period of say, more than 5 years.

iii) Area at 1 is based on available topo maps/existing area information, and very preliminary field investigation

c/ To be determine during O&M of CIS