

**GRANT-0299 NEP: Water Resources Project
Preparatory Facility**

**Preparation of Community-Managed Irrigated
Agriculture Sector Project – Additional Financing
(Package 2-A)**

FINAL REPORT
**Supplementary Appendix 8. Poverty and Social
Assessment**
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PREPARED FOR
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ACRONYMS

ADB	Asian Development Bank
AMIS	Agency Managed Irrigation System
AO	Association Organizer
CBS	Central Bureau of Statistics
CMIASP	Community-Managed Irrigated Agriculture Sector Project
CMIASP-AF	Community-Managed Irrigated Agriculture Sector Project Additional Financing
CPC	Consultation, Participation and Communication
CPMO	Central Project Management Office
DADO	District Agricultural Development Office
DAE	Directorate of Agriculture Extension
DAG	Disadvantaged Group
DMF	Design and Monitoring Framework
DOA	Department of Agriculture
DOI	Department of Irrigation
EA	Executing Agency
FMIS	Farmer Managed Irrigation System
GESI	Gender Equity and Social Inclusion
GON	Government of Nepal
GRC	Grievance Redress Committee
HDI	Human Development Index
IA	Implementing Agency
IDD/IDSD	Irrigation Development Division / Irrigation Development Subdivision
IP	Indigenous Peoples
IPPF	Indigenous Peoples Planning Framework
IR	Involuntary Resettlement
ISPMC	Institutional Strengthening and Project Management Consultant
JT/A	Junior (agricultural) Technician/Assistant
LAR	Land Acquisition and Resettlement
LF	Leader Farmer
M&E	Monitoring and Evaluation
MOFALD	Ministry of Federal Affairs and Local Development
MOHP	Ministry of Health and Population
NFIN	National Federation of Indigenous Nationalities
NGO	Non-Governmental Organization
NLSS	National Living Standard Survey
NPC	National Planning Commission
OFWM	On-Farm Water Management
O&M	Operation and Maintenance
PIU	Project Implementation Unit
PSC	Project Steering Committee
RAD	Regional Agriculture Directorate
RID	Regional Irrigation Directorate
SMU	Sub-project Management Unit
SPPR	Subproject Preparation Report
SPS	Safeguards Policy Statement
UNCT	United Nations Country Team
VDC	Village Development Committee
VLDF	Voluntary Land Donation Framework
WRPPF	Water Resources Project Preparation Facility
WUA	Water User Association

I. INTRODUCTION

A. Country Context

1. Population

1. Nepal is a multi-ethnic, multi-lingual, multi-religious, and multi-cultural country. The country's population stands at 26.5 million with an annual growth rate of 1.35%. The number of males per 100 females decreased from 99.8 in 2001 to 91.6 in 2011. The average household size for the country is 4.88.

2. The topography divides Nepal into three major ecological regions, viz. mountain, hills and terai. These regions respectively comprise 35%, 42% and 23% of the land mass and contain 6.7%, 43% and 50% of the total population. The proportion of the population living in the terai is increasing, while the proportion of people living in the hills and mountains has declined over the years. This disproportionate distribution of population among the ecological regions is attributed to the availability of productive land in the terai, difficult topography of the hills and mountain, disparity in socio-economic development, and the lack of infrastructure and access to information in these regions.

2. Caste and Ethnic Diversity

3. The 2011 census identifies 125 different caste/ethnic groups with 123 languages and practicing a mix of Hindu, Buddhist, Kirat, Animism, Christian and Muslim religions. The Government of Nepal (GON) has recognized 59 ethnic (*Janajati*) groups spread across all ecological regions of the country. No single ethnic group commands a majority. However, particular ethnic groups are dominant in selected geographical areas and district. As a result they comprise a local majority while constituting a national minority. For instance, the Rais and Limbus are dominant in the eastern hill districts, Tamangs and Newars in the central hills and the Tharus in several western terai districts.

4. Ethnic groups in total comprise 37% of the population. Larger ethnic groups include the Magar (7.1%) Tharu (6.7%), Tamang (5.6%), Newar (5.5%), followed by Rai (2.8%), Gurung (2.39%), Limbu (1.58%), and Sherpa (0.68%). The remaining groups have populations less than 0.46% with some having only a few hundred people (e.g. Raute). The *Brahmin-Chhetri* castes comprise 30% of the population, and *Dalits* 13%. About 50% of the population speak Nepali as their mother tongue.

3. Poverty

5. At the national level the country made impressive gains in the absolute number of people living in extreme poverty (\$1.25/day), dropping from 42% in 1995 to 25% in 2011 and 24% in 2013. And while the population below \$2 a day at 2005 international prices also declined it is still high at 57.3%.

6. Country level aggregate figures however, mask the disparity that exists by area, ethnicity and caste. For instance, the eastern development region at 21.4% has the lowest poverty level, with the figure increasing to 45% in the mid western and 41% in the far-western regions.

7. In terms of the distribution of the poor across development regions, the central region continues to house the greatest number of poor while having a poverty incidence below the national average (24%). The mid-western and far-western regions, on the other hand have

the highest levels of poverty respectively but house 18% and 10% of all poor on the account of the low population density.

8. Rural-urban disparities continue to exist with rural poverty almost double (27.43%) that of urban poverty (15.5%). Decreases in poverty rates have also been unequal, ranging from 6% among Muslims to 46% among *Brahmin* and *Chhetri* during the period 1995/96–2003/04 (Table 1). The percentage of poor among *Dalits* is 42% compared to 23% for the non-*Dalits* (NLSS 2011). Nationwide, poverty decreased by more than 20% in all but hill *Janajati* and Muslim groups. This inequality resulted in an increase in the Gini coefficient from 0.34 to 0.41 in 2004, falling again to 0.33 in 2011.

Table 1. Poverty Incidence by Ethnicity and Caste

Ethnicity & Caste	Poverty Incidence Rate	
	1995/1996	2003/2004
Nepal	41.8	30.8
Brahmin Chhetri caste	34.1	18.4
Dalit caste	57.8	45.5
Newar Janajati	19.3	14.0
Hill Janajati	48.7	44.0
Terai Janajati	53.4	35.4
Muslim	43.7	41.3
Terai middle caste	28.7	21.3
Others	46.1	31.3

Source. Central Bureau of Statistics. 2005

9. By occupational groups, poverty is highest among agricultural wage laborers, followed by small farmers who cultivate their own land. Additionally, poverty is higher among the landless households, larger families or those with larger numbers of children, and among households with illiterate heads. Poorer families have more children in the hope of increasing contributions to household income as well as of ensuring continued economic security as parents age.

10. In 1996 households headed by females represented 9% of the population and had a poverty rate of 42% equal to the then Nepal average. In 2003-04 the proportion of the population residing in female-headed households increased to 14%, with the poverty rate amongst these households declining to 24%.

11. Continued poverty reduction is subject to many uncertainties. Progress has been underpinned by an exceptional contribution of remittances from overseas, amounting to 20% of GDP in 2010. Results of the 2011 census in Nepal show that, out of a total population of 26.7 million, almost two million are working abroad double the figure in 2001.

4. Poverty Reduction and Human Development

12. The Human Development Index (HDI) in urban areas (0.630, 2006) is significantly higher than that in rural areas (0.482, 2006), where most people live. Across regions, the HDI is lowest in the mid-western region (0.452) and highest in the central region (0.531). Overall, gender inequality has decreased because of the increase in female life expectancy and greater enrollment of girls in basic and secondary education.

13. Significant progress has been made in improving access to health care, education, and drinking water, yet the health outcomes have not been evenly spread. Life expectancy for men and women is about the same. However, there are disparities between different

groups. *Janajati* Newars and *Brahmin* castes live 11 to 12 years longer than *Dalits* and Muslims. *Dalit* children have the highest infant and under-5 mortality rates and girls are 1.5 times more likely to die between their first and fifth birthdays than boys. Health and education gains are distributed unevenly between women and men, and among various caste and ethnic groups, ecological regions, and urban and rural areas. The hardest hit are the *Dalits* as indicated by their low HDI compared to other groups (Table 2).

Table 2. Human Development Index by Major Caste/Ethnicity, Nepal, 2006

Caste/Ethnicity	HDI
All <i>Brahmin/Chhetri</i>	0.552
Hill <i>Brahmin</i>	0.612
Hill <i>Chhetri</i>	0.514
Terai (<i>Madhesi</i>) <i>Brahmin/Chhetri</i>	0.625
Terai (<i>Madhesi</i>) Other castes	0.450
All <i>Dalits</i>	0.424
Hill <i>Dalits</i>	0.449
Terai <i>Dalits</i>	0.383
All <i>Janajatis</i>	0.555
Hill <i>Janajati</i> Newar	0.616
Hill <i>Janajatis</i> excluding Newar	0.507
Terai <i>Janajatis</i>	0.407
Muslim	0.401
Other Unidentified	0.559
All Nepalis	0.509

Source. Nepal Human Development Report. UNDP 2009

14. Of the three components of the HDI, education is the most significant driver. This accounts for the wide gap between the *Brahmin/Chhetri* and other castes. The lower HDI for *Dalits*, and Muslims, derives largely from their very low educational attainment compared to other components of HDI. Their low human development or capability hinders their representation and participation.

15. Overall, 61% of the population aged 6 years and above is literate. Literacy rate is substantially higher in urban areas (77%) than in rural areas (57%). Regional disparities also exist, with the highest literacy rate in the western development region (66%), and the lowest rate in the central development region (57%). Among ecological belts, the hills have the highest overall literacy rate (69%). There are marked gender disparities in literacy rates: 72% males aged 6 years and older are literate as opposed to 51% females (CBS 2011).

II. EFFORTS TO REDUCE POVERTY

A. Government Efforts to Reduce Poverty

16. Nepal demonstrated its commitment to social inclusion in the 10th Five Year Plan 2002-2007.(10th Plan), The goal of the 10th Plan—which was also the Government's Poverty Reduction Strategy, and formulated and implemented in the conflict setting was to reduce poverty through broad-based economic growth, inclusive social development, good governance, and targeted programs, including rural infrastructure development. The 10th Plan was succeeded by two 3-year interim plans (TYIPs): TYIP, 2008–2010 in July 2007 and TYIP, 2011–2013 in July 2010.

17. The TYIPs, an extension of the 10th Plan embodied the government's long-term poverty reduction strategy, and although shorter in time horizon, gave continuity to the 10th

Plan's long-term objective by maintaining the focus on pro-poor and broad-based economic growth, and inclusive social development. However, since the TYIPs were formulated in the post conflict transitional period it is more focused on the peace dimensions of development viz. reconstruction, rehabilitation and reintegration. Additionally, its national planning process is more aligned with the Millennium Development Goals (MDGs).

18. Delivery on the TYIP objectives has, however, been constrained by the absence of elected local bodies (since mid-2002) and the disruptive nature of the political transition. Nonetheless, this period witnessed a number of landmark legislative reforms to address key social exclusion issues (e.g., allowing women to retain parental property after marriage; requirement to maintain one-third representation of women in all state structures; and reservation for *Janajatis*, *Dalits* and other disadvantaged groups in state institutions).

19. A draft National Development Strategy (NDS) was prepared for the remainder of the transitional period (until FY2012) by the Maoist-led coalition Government. The draft NDS envisioned tangible improvements in the living standards of the poor, disadvantaged and socially excluded sections of the population through employment-oriented and broad based high economic growth by investing in key infrastructure facilities and improving agriculture productivity; and improved governance and service delivery systems by introducing far-reaching governance (including decentralization, anticorruption and judicial) reforms to empower the people, especially the poor and socially excluded, so as to enhance accountability of the public as well as the private sector. The NDS called for intensive commercialization of the agriculture sector, cooperative farming, increased investments in irrigation, rural/agriculture roads, rural electrification, research and extension services, and efficient rural credit delivery.

20. The current three year 13th Plan 2013-2015 in essence gives continuity to the priorities of the 10th Plan: poverty reduction through employment oriented and inclusive economic growth and effective public service delivery and social development. It has a long-term perspective of transforming Nepal into a developing country from its present least developed country status by 2022. The 13th Plan also targets to bring down the population below the poverty line to 18% with an economic growth rate of 6%. Other goals of the plan are to achieve an annual growth rate of 4.5% in the agriculture sector (through increased productivity, diversification and commercialization), increase life expectancy to 71 years, employment growth rate to 3.2% and reduce maternal mortality rate (MMR) from 229 in 2013 to 134 per 100,000.

21. Nepal is on track to achieving all of its MDG targets save the targets concerning environmental sustainability and global partnership. At the current 1% annual decline in poverty, the country is on track to reduce poverty to 21% by 2015. The proportion of stunted children declined from 57% in 2001 to 41% in 2011 and that of underweight children, from 43% to 29% in the same period. Although this improvement fulfils one of Nepal's MDG targets for hunger, the high figure remains a concern. Moreover, social and geographic variations exist. For instance, there are more stunted children in rural areas (42%) than in urban ones (27%). Rates of stunting in the mountains, hills and terai are 53%, 42% and 37% respectively, much higher than the MDG target of 30%.

22. In primary education the net enrolment rate (NER) reached 95.3%; the ratio of girls to boys in primary education improved significantly since 1990, so much so that the target (1.0) set for 2015 has already been achieved in 2013. Nepal is also on track to achieve its MDGs related to child health and MMR. In fact, the target for the U5MR, 54 per 1,000 live births, was achieved in 2011 and a new target, 38, set. The IMR target was also lowered, to 32 (Nepal Health Sector Program-II 2010-2015). MMR standing at 229 per 100,000 live births (2013) is also on track to achieve the MDG5 target of 213/100,000 by 2015. The MDG for HIV prevalence among adults aged 15-49 years was achieved in 2011.

B. Government Efforts to Address Gender and Social Inclusion

23. Much effort has been made to strengthen government capacity to address gender issues through policy and institutional reforms, yet challenges remain in *engendering* the development process and governance structures. The 2005 amendment of the Civil Service Act includes a provision for formulating affirmative action policies for women in government service and has exempted the age bar for women staff applying for the Public Service Commission (PSC). In 2007, the second amendment to the Civil Service Act included a time-bound reservation system allocating 45% of the total posts in the public service to women (33%), *Dalit* (9%), *Janajati* (27%) and *Madhesis* (22%). The government has also ensured women's representation in policy making bodies to 33%.

24. Nepal is party to the CEDAW (1991), which commits to reforming discriminatory laws against women. The 11th Amendment of the Civil Code (commonly referred to as the 'Women's Bill') in 2002 provided equal inheritance rights to unmarried daughters as sons, raised the age of consent for marriage, sanctioned the right to abortion under certain circumstances and amended changes relating to divorce. The Gender Equality Act (2006), to which ADB contributed significantly through policy dialogue, redressed many discriminatory laws against women.

25. Nepal's signatory to the ILO Convention 169 (2007) shows its commitment to promoting the rights of indigenous nationalities. However, legal and political exclusion based on gender, caste and ethnicity is evident in the low representation of women, *Dalits* and *Janajatis* in political power structures. The number of women parliamentarians in the Constituent Assembly increased to 33% in 2007 compared to 18% in 2006 as a result of affirmative policies. There has been no election for local governments since the last 10 years. Hence, alternative measures such as Ward Citizen Forums (WCFs) and Integrated Planning Committees (IPCs) have 33% representation of women as mandated by the GESI policy of the MOFALD.

26. The Interim Constitution 2007¹ ensured the rights of women to confer citizenship to children in the name of the mother and provided equal inheritance rights to sons and daughters. Women and men are to receive equal pay for work of equal value. Similarly, the Interim Constitution is inclusive towards *Janajatis*, *Dalits* and *Madhesis*, and addresses issues such as the right to education in one's mother tongue.

27. The 13th Plan upholds the spirit of the Interim Constitution and envisions tangible improvements in the living standards of the poor, disadvantaged and socially excluded sections of the population through targeted programs for socially and geographically discriminated people including women, *Janajatis*, *Dalit*, Muslims, *Madhesis*, people of Karnali zone, and other marginalized indigenous groups. Affirmative action, targeted programs and reservation policies are envisioned to achieve improvements in these areas. Women's social, economic and political empowerment and minimum 33% women's representation in all state structures is envisaged.

28. Similarly, the Irrigation Policy 2013 provides continuity to the 2003 irrigation policy and mandates minimum 33% women's representation including representation of *Dalit*, and "downtrodden and backward" ethnic communities in the water user association (WUA). In addition, the policy provides for ending discrimination against women in the irrigation sector,

¹ The attempt of Nepal's first elected constituent assembly (CA) to draft a new constitution and restructure the state in line with the popular movement of 1990 failed, so this task is being turned over to the second CA due to be elected on 19 November 2013.

and increasing women's access to opportunities, information and irrigation training programs.

C. ADB Country Partnership Strategy

29. The Asian Development Bank's (ADB) country partnership strategy (CPS) for 2010–2012 supports the country's peace and development aspirations by promoting four pillars.

30. They include:

- (i) **broad-based and inclusive economic growth:** supports the development of key infrastructure and private sector strengthening and income generation through skills development;
- (ii) **inclusive social development:** improves access to basic social and financial services, strengthen social protection systems, and design well targeted programs for the poor and socially excluded;
- (iii) **governance and capacity building:** strengthen local governance, enhance the transparency and accountability of the public sector, and monitor the effectiveness of public service delivery; and
- (iv) **climate change adaptation and environmental sustainability:** promote clean urban development, renewable energy, mainstreaming of environment safeguards in government systems, and disaster management.

31. These four pillars are envisioned to assist the country sustain the hard won gains of the peace process, and avoid slipping back into conflict. It will support the transition to lasting peace and stability, which will lead to improved public service delivery and a better standard of living for the poor and the socially excluded. Helping to adapt to and mitigate the impacts of climate change and to adopt environment friendly development approaches is expected to ensure that growth is sustainable.

32. In Nepal irrigation is a critical input to improve agriculture productivity, which remains the lowest among the neighboring countries. The 20-year Agriculture Perspective Plan (APP) launched in 1995 with ADB assistance prioritizes irrigation as the foundation of a modern production system, with emphasis on improving the performance of traditional surface water farmer managed irrigation system (FMIS), suffering from low productivity due to unreliable diversion and high distribution loss, and maintenance costs caused by fragile and rudimentary intake and distribution structures.

33. Building on the lessons learned from APP implementation the draft Agriculture Development Strategy 2012 prepared with ADB assistance envisages to focus on the poorest and marginal farmers in the irrigation economy; extend year-round irrigation to additional areas; provide effective extension services, particularly for higher value crops; strengthen WUAs and expand their capacity to manage higher level canals; make farmers more self-reliant and less dependent on government for operation and maintenance (O&M) and system rehabilitation; and make irrigated agriculture more commercial, particularly given the increasingly small and fragmented farm plots.

III. POVERTY AND SOCIAL ASSESSMENT

A. Methodology

34. This poverty and social assessment report draws on information collected from subproject preparation reports (SPPRs), quarterly progress reports, field visits, and discussions with officials of the Department of Irrigation (DOI), Department of Agriculture (DOA), Nepal Resident Mission (NRM)/ADB, Institutional Support and Project Management Consultant (ISPMC) team, and other secondary sources.

35. The methodology applied in the selection of subprojects has taken into account (i) the availability of NGO reports, (ii) ecological region, and (iii) subprojects with and without canal extensions. Thirteen hill and 7 terai CMIASP subprojects representing the central and eastern development regions were selected to give a profile of the beneficiaries.

36. Qualitative information was obtained through key informant interviews and stakeholder analysis with DOI and DOA central level staff along with Irrigation Development Division (IDD) and District Agriculture Development Office (DADO) officials of Jhapa district in the eastern development region. Paliya and Kankai irrigation subprojects were visited where discussions were held with WUA executive members, men and women beneficiaries, district irrigation and agriculture officials, community organizers and NGO staff to gain a better understanding of community perspectives on irrigation performance, gender and social inclusion, and impacts of improved irrigation infrastructure on poverty.

B. Data Quality and Processing

37. The SPPRs provide limited or no disaggregated information on beneficiary characteristics. Its salient features provide information on the total number of households differentiated by the number of disadvantaged group (DAG) households and non DAGs, landholding, major occupation of the people, average household income per subproject, literacy by sex, food sufficiency, and gender distribution of task and control over household assets. To make this initial information more useful NGO reports containing a list of beneficiary households by first and last name were sifted to disaggregate households by ethnicity, *Dalits*, and *Brahmin/Chhetri* categories.

38. However, the NGO reports were not uniform in terms of the quality of reporting and data collected. As a result it was not feasible to obtain a complete set of social data from a single source. For instance, data on landholding size for the different categories of beneficiaries are not available for subprojects selected for review. Some disaggregated information is available in resettlement plans, and some in the detail design reports.

39. Again, there is no uniformity or accuracy in the social data reported. It was found that some NGOs define landless as those households with less than 0.169 ha land. In others, inconsistencies were observed in the number of land parcels that a farmer owned, while in some cases data was incomplete or not useful. Consultation of subproject reports with ISPMC became essential for sifting through the conflicting and often inaccurate socioeconomic data, and to reach consensus on the data to be used.² After extensive consultations and probing through NGO reports with ISPMC team disaggregated data on 16 subprojects were constructed.

40. It was decided to use food sufficiency as a proxy indicator of poverty as these had a higher probability of accuracy, and also allowed creating a poverty scenario for each subproject (number of households with food sufficiency less than 3 months, 3-6 months, 6-9

² The Project Preparation team appreciates the support provided by ISPMC team.

months and 9-12 months). The 2010 Mid Term Review (MTR) of CMIASP also advised that socioeconomic data including landholding size was poor. Given there are caveats in data accuracy the figures presented in the assessment are indicative.

41. A need for uniformity in the type of social data collected for disaggregated analysis is urgent. Information on beneficiary characteristics by sex, caste, ethnicity, type of farmer (owner cultivator, sharecropper/contract farmer), household size, literacy, food sufficiency, size of landholding, and major occupation of household head is needed. The variables listed are recommended to be collected in the management information system (MIS). The objective is to deliver information that will be useful, while gathering the minimum necessary to make decisions, and to allow monitoring of disaggregated subproject benefits. It is recommended that social data collected during preparation of the SPPR if updated during detail design be promptly reflected in the MIS to avoid confusion and data inconsistency. It is understood that the IDD/IDSDs are responsible for providing regular data inputs.

C. Socioeconomic Profile of the Beneficiaries

42. The CMIASP expected to reach areas with high percentages of the poor living in geographically marginal rural areas of the central and eastern development regions. The analysis shows that 51%% of the beneficiaries have landholdings less than 0.5 ha in the hills. Similarly, in the terai 57% beneficiaries have landholdings less than 1.0 ha. Of these *Dalit* households have the smallest landholdings at 0.57 ha in the terai and 0.48 in the hills. Landholdings of *Janajatis* and *Brahmin/Chhetri* groups are somewhat similar in both the terai and hill subprojects (Table 3).

Table 3. Landholding disaggregated by Janajati, Dalit and Brahmin/Chhetri

Subprojects/ ecological	Janajati (ha)	Dalit (ha)	Brahmin/Chhetri & others ³ (ha)	Remarks
Terai				
Paliya terai	1.01	0.60	1.07	Comprised 3 categories : marginalized, disadvantaged and advanced <i>Janajati groups</i>
Tanting terai	1.06	0.53	0.81	Comprised 4 categories: highly marginalized, marginalized, disadvantaged and advanced <i>Janajati</i> <i>groups</i>
Hill				
Inгла Khola hill	0.75	0.48	0.86	Comprised 2 categories: disadvantaged and advanced <i>Janajatis</i> <i>groups</i>
Dobhan hill	0.91	0.48	0.81	Comprised 3 categories : marginalized, disadvantaged and advanced <i>Janajati groups</i>
Dhusiphat hill	0.53	-	0.13	Comprised only 1 category: advanced <i>Janajati groups</i> ; there were no <i>Dalits</i>

Source. NGO Reports.

43. In terms of the distribution of beneficiaries by caste and ethnicity 52% comprise *Janajatis*, mainstream groups 44% and disadvantaged castes such as the *Dalits* 4% (Table 4). The percentage of landless reported (9.5%) is on the high side as consultations with ISPMC team and a closer look at the NGO reports reveal that households with landholdings

³ Others include Giri, Puri, Jaisi, Marwadi Sikhs, etc. primarily those groups/castes that do not fit into either the *Janajati* ethnic groups or *Dalit* castes.

less than 0.1 ha were included in the landless category by some NGOs. They are in fact marginal farmers, who are sharecroppers, and direct beneficiaries of improved irrigation infrastructure

Table 4. Distribution of Beneficiaries by Caste, Ethnicity and Landholding Size

No	Name of Irrigation Subproject	District	Janajati hh	Dalit Hh	Brahmin Chhetri & Others hh	Total hh	Landless hh		Ecological Region			
							No	%	Terai hh		Hill hh	
									<1.0 ha	%	<0.5 ha	%
Terai Irrigation Subprojects												
1	Paliya	Jhapa	129	2	149	280	47	17	117	42	-	-
2	Tanting	Jhapa	67	25	121	213	36	17	117	55	-	-
3	Bhulke	Sunsari	295	15	38	348	49	14	225	65	-	-
4	Kalikosi	Morang	65	20	240	325	28	9	243	75	-	-
5	Sadhuwa	Parsa	141	0	101	242	0	0	100	41	-	-
6	Sub-Total		697	62	649	1408	159	11*	-	-	-	-
	Average %		50	4	46				57			
Hill Irrigation Subprojects												
1	Akhuwa Asine	Bhojpur/1	140	3	0	143	5	3	-	-	40	28
2	Ghatte Khola	Bhojpur/1	94	6	93	193	4	2	-	-	78	40
3	Labunglewa Kamphu	Panchthar/2	103	3	23	129	11	9	-	-	26	20
4	Nagin Sarkari Kulo	Panchthar/2	175	6	46	227	37	16	-	-	121	53
5	Dovan Khola	Okhaldhunga/2	21	22	82	125	3	2	-	-	50	40
6	Shahutar	Sankhuwasabha/2	28	0	34	62	0	0	-	-	12	19
7	Hattisar	Tehrathum/2	85	8	44	137	29	21	-	-	76	55
8	Hinguwa	Tehrathum/2	89	0	40	129	0	0	-	-	65	50
9	Koirale Khola	Kathmandu/2	23	0	206	229	13	6	-	-	221	97
10	Diyalitol	Makwanpur/2	6	3	32	41	6	15	-	-	22	53
12	Ripini Dhotar	Sindhupalchowk/2	NA	2	NA	100	2	2	-	-	73	73
13	Miltikhola	Ramechhap	NA	NA	NA	162	16	10	-	-	65	40
13	Sub-Total		764	51	600	1677	126	8*	-	-	-	-
	Average %		54	4	42			9.5*				51

Source. SPPRs, NGO Reports and Resettlement Plans.

* This figure is deemed to be on the high side as households with less than 0.1 ha were included in the landless category.

44. The literacy rate at 48% is lower than the national average of 61%. Gender disparities in literacy rates exist but it is less pronounced than the average figures for the country as a whole (Table 5). Female literacy rate is 43% and is 10 percentage points lower than males at 53%. Average household size is 6 which is larger than the national average of 4.8. The average size of the command area in the hills and terai is 70 ha and 167 ha respectively.

Table 5. Literacy Level and Major Occupation

SN	Subproject	Literacy rate by sex (%)			Occupation Agriculture
		Female	Male	Average	
	Hills				
1	Milti khola/ Ramechhap	41	53	47	90
2	Diwali/ Makwanpur	13	15	18	98
3	Ripini Dhotar/ Sindhupalchowk	37	52	44	97
4	Labung Lewa/ Panchthar	27	32	29	97
5	Dobhan/ Okhaldhunga	50	54	52	80
6	Hinguwakhola/ Terahthum	27	40	34	97
	Average (Hill)	32	41	37	93
	Terai				
1	Bagaiya Jamuni/Bara	41	53	47	96
2	Neurenipaini/ Chitwan	66	76	71	94
	Average (Terai)	54	64	59	95
	Overall Average	43	53	48	94

Source. SPPRs, NGO Reports.

D. Food Sufficiency

45. Overall 60% households do not have year round food sufficiency. Of these 17% have food sufficiency for less than 3 months, 13% for 3-6 months, 30% for 6-9 months, and 40% 9-12 months (Table 6). The World Food Program (WFP) 2008 defines “very poor” as households with less than 3 months food sufficiency; “poor” with 3-6 months food sufficiency, and “moderately poor” as 6-9 months food sufficiency. Using this definition, 30% households are deemed to be below the poverty line of \$1.25 a day.

46. At the country level FAO (2010) reports that “only 40% rural households produce enough food to meet their year round needs”. Food inadequacy is highest in the eastern region (47%), and it is higher in rural areas than in urban areas (34% versus 17%). Malnutrition in Nepal is among the highest in the world and Nepal ranks 3rd in terms of poor nutrition among the 8 countries of South Asia (NNSP and MOHP, 2004). Food security is therefore an essential factor for breaking the vicious circle of poverty and malnutrition.

47. The low food production is largely due to the predominance of rain fed agriculture, traditional farming practices, limited agri-input, inadequate technical advice for farmers due to poor extension services, poverty and frequent droughts and floods. In addition, scattered land parcels render difficulty for commercialization and management care. At the country level the proportion of farms of more than 2.0 hectares, described in the NLSS as “large”, fell from 12% to 4% between 1995 and 2010.

Table 6: Food Sufficiency

SN	Name of ISP	Food Sufficiency			
		9-12 months %	6-9 months %	3-6 months %	<3 months %
Terai					
1	Paliya	50	30	10	10
2	Tanting	40	20	20	20
3	Bhulke	20	47	16	17
4	Kalikosi	55	31	10	4
5	Sadhuwa	32	31	27	10
6	Neurenipaini	20	15	35	30
7	Bagaiya Jamuni	68	32	0	0
Hill					
8	Akhuwa Asine	32	31	27	10
9	Ghatte Khola	32	30	27	11
10	Labunglewa Kamphu	58	15	16	11
11	Nagin Sarkari Kulo	14	28	20	38
12	Dovan Khola	20	40	20	20
13	Shahutar	56	25	16	3
14	Hattisar	68	32	0	0
15	Hinguwa	68	32	0	0
16	Koirale Khola	20	32	28	20
17	Diyalitol	68	32	0	0
18	Tadikhola	32	31	26	11
19	Ripini Dhotar	5	8	20	67
20	Miltikhola	62	15	12	11
	Total	40	30	17	13

Source. SPPRs.

E. Economic Activity

48. Across all caste and ethnic groups the majority depend on agriculture for their livelihoods. Data shows an overwhelming 94% of the population depend on subsistence farming for their livelihoods, compared to the national average of 76%

49. In the hills the traditional division of labor makes men responsible for land preparation (69%) application of irrigation water (63%), maintenance of irrigation canal (56%), application of fertilizer (53%), threshing (64%) and labor mobilization (51%). In the terai, there is a similar pattern. However, men play a much larger role in land preparation (81%), application of irrigation water (81%), maintenance of irrigation canal (77%) threshing (73%) and labor mobilization. In both ecological regions women's contribution to agricultural

tasks is highest in planting (61%) and weeding (59%) and post harvest activities, such as storing, harvesting and processing (Annex 1-2).

50. Data on decision making suggests a similar varied pattern linked to work contribution. Women emerge as main decision makers on weeding time, harvesting, storage, and processing. Men, on the other hand are the primary decision makers on the type of chemical fertilizer to be used, choice of crops, purchasing and sale of livestock.

51. There is wide acceptance of the prevailing gender division of labor whereby both men and women see themselves as contributing to the family. Irrigated agriculture is seen as a cooperative effort involving both men and women and support to either male (husband) or female (wife) is seen as a benefit for the entire family. At the same time, however, women's contribution is undervalued. For instance, work requiring physical strength is considered "major" work; women are more involved in time consuming and tedious tasks such as weeding, planting, and processing---often these are not perceived as "major" work.

52. Several factors negatively affect rural agricultural family economies. They include marginal arable land holdings, low agricultural productivity, and limited opportunities for wage labor. In addition, sharecropping arrangements with landowners varies and the latter are not motivated to invest in land. For instance, a variety of situations for sharecropping continue to be practiced. They include:

- informal exchange of sharecropping whereby a farmer who is a self-cultivator, gives land for sharecropping and also takes land as a sharecropper as a means for consolidating operational landholdings;
- lease land for a fixed sum of money or quantity of produce;
- cultivation of land by relatives or neighbors without any payment to the landowner who has migrated out of the district and cannot find any buyers for the land;
- in the hills where a high proportion of men migrate their land is given for sharecropping when women cannot manage by themselves; or
- families without sufficient labor to cultivate their land, including small farms from where the men migrate for employment also give their land for sharecropping

53. Issues associated with sharecroppers highlighted include:

- not all sharecroppers are residents of the command area and hence are not recognized as a WUA member;
- unwillingness of sharecroppers to contribute labor for maintenance of the irrigation system;
- conflict with landowner on crop share;
- difficulty in keeping track of sharecroppers by WUA executive members as sharecroppers also change by crop.

54. In the hills and mountains the rugged terrain makes it difficult to promote economic activity and deliver services. These regions are also physically isolated, with poor communications and infrastructure. Lack of employment is the most important reason to migrate, followed by food insecurity and debt. Almost all households have at least one family member who is a labor migrant, with a few households having multiple migrants.

55. Discussions with WUA members reveal that the majority of labor migrants from the subproject areas are young, low skilled males. Their absence from the farms has negative effects on agricultural production. As a result, small scale, low productivity agriculture is becoming feminized while the share of agriculture in the GDP is declining, thus increasing women's economic marginalization. In the absence of other employment opportunities, the

major purpose of outmigration is cash income. For poor households, migration emerges as an established, desperate coping strategy, and is reduced significantly whenever local livelihood opportunities become available. They therefore more commonly migrate, either immediately following a shock, or to repay a loan which was taken to survive a shock. Research in Nepal indicates a strong relationship between the decision to migrate, and inability to recover from a 'food shock'

56. Compared to male labor outmigration female labor migration is comparatively less, although it is reported that it is increasing. Most female labor migrants go to the oil rich countries of the Persian Gulf as domestic workers and as care providers for the elderly. The quest for higher education has also emerged as an important push factor among the youth seeking alternative opportunities to agriculture.

F. Farmer Demand

57. Farmers' priority is food sufficiency, meaning primary crops which are usually not sold are their main concern. Farmers do not necessarily choose a cultivation pattern based on comparative economic returns. Rather, they first consider their own consumption requirements. If irrigation were increased, farmers who are not food sufficient would most likely opt for primary crops especially rice. Vegetables are preferred by marginal and women farmers with access to irrigation water, and to a local market.

58. Research undertaken during the 2008–2009 food price crisis show that the poorest rural families spend 78% of their income on food (United Nations World Food Program and Nepal Development Research Institute 2008), making them highly vulnerable to food price volatility. When food prices go up, households are forced to sell assets, to make cuts in the household budget, and to take on debts – forcing them into a vicious circle of deepening poverty. A recent survey of a sample of CMIASP subprojects by DOA showed that 96% of the beneficiary households grew paddy followed by maize, potato and seasonal vegetables, evidencing that farmer's prime concern is food security (DOA 2013).

G. Key Constraints

59. Key constraints to increasing irrigated agriculture production to its full potential identified during stakeholder analysis include the lack of reliable and adequate water for crop irrigation, low agricultural productivity resulting from poor knowledge of crop diversification, limited access to improved agriculture technology and inputs, limited information and knowledge of market linkages, and limited institutional capacity of government and WUA for participatory irrigation management.

60. The SPPRs report that the primary problem faced by farmers is water shortage for winter and spring cultivation and in many cases even for monsoon paddy land preparation because of limited discharge in the irrigation water source. Farmer demand reported in most of the SPPRs is the construction of a permanent intake and other features in the canal system to reduce high seepage loss.

61. Discussions in the field with WUA members bring to light the head tail inequity in water allocation. Tail enders, in addition to receiving a smaller amount of water in absolute terms during any crop season, also face a high level of uncertainty and fluctuation associated with water supply which inhibit the adoption of improved agricultural technology, and use of modern inputs compared to farmers at head reaches of the system. As a result there is less irrigation intensity at tail ends, low level of agricultural intensification, and adoption of low yielding varieties that can withstand water stress.

62. The head tail inequity in water allocation, it appears is not simply a function of technical constraints and conveyance losses. Rather, such inequity is the result of poor governance in the irrigation system and institutional failure associated with the WUA responsible for managing the system. WUA executive members reported not being able to enforce agreed rules, and that upstream users are unwilling to allow water to flow unless their fields are irrigated (Annex 4).

63. In the success of WUA, the benefit to tail end farmers is crucial while benefits to the upstream farmers are perceived as nominal, as they, in any case are getting the desired amount of irrigation water. The restructuring of irrigation commands through reforming of institutional factors, such as improved stakeholder participation of all categories of farmers, including women and disadvantaged groups in decision-making, participatory irrigation management, better enforcement of WUA rules and regulations to minimize the lawlessness seen in irrigation commands is expected to improve more equitable distribution of irrigation water. The WUA rules will provide for the landless who are sharecroppers to be considered as WUA members. Sharecroppers who may find it difficult to meaningfully participate relative to local elites will be provided with social preparation assistance and targets for their participation in trainings.

H. Gender Issues

64. Crosscutting categories of ethnicity, caste, region of origin, and poverty is gender. While gender relations varies to some extent by age, life cycle related positions within the family, caste, ethnicity, and class, the patrimonial nature of the social system, and the traditional gender based division of labor contribute to an unequal level of opportunities and attainments between women and men.

65. Regardless of ethnicity or caste the majority of the population is dominated by patriarchal values that emphasize male children and male inheritance of family property. Women lag behind in their access to education, information, economic resources, and opportunities for employment.

66. The gender issue in irrigated agriculture, as elsewhere in South Asia is whether women's work translates into access to and control over resources (technology, training) and benefits. Women's access and control are restricted through a number of practices and conditions. These include landownership rights being vested in men that limits their access to WUAs, restrictions on women's physical mobility (terai), and institutional services (extension and credit) conventionally delivered primarily by men to men.

67. Women's access to economic resources remains limited. In terms of purchasing power parity, women's earned income is half that of men. Women earn less than men in both agricultural and non-agricultural wages, and very few women have legal ownership of property. In urban areas, 26.8% households report female-ownership of fixed assets with this percentage dropping to 18% in the rural areas (CBS 2011).

68. Government policy requiring at least 33% women's representation in all registered WUAs has brought about a change with opposition to the idea of women's involvement in WUA committee gradually diminishing. This goal is more easily attained in the hills as evidenced by 37% women's representation in the WUA compared to 21% in the terai.

69. Women's participation in WUA related training such as training in operation and maintenance, and construction quality control is low. However, women's participation in agriculture related training is high (48%), in the livelihood enhancement program (LEP) it is 52%.

70. The fielding of women Community Organizers (87%) has become an effective tool to guarantee adequate information flow to women, and increase women's participation in view of the fact that virtually all Association Organizers are men.

71. Discussion with beneficiary women and men on women's low participation in WUA executive committees highlight the following constraints to women's equitable participation. They include:

- women's workloads at home and their relatively lower flexibility in terms of time;
- women's hesitation to be part of organizations dominated by men;
- lack of information available to women;
- low literacy levels and consequently low capacity to capitalize on new development opportunities;
- membership based on landownership;
- the perception that irrigation related decision making structures is a male domain; and
- lack of gender sensitive rules for committee meetings, especially relating to timing and venue.

72. The Mid Term Review (MTR) 2010 highlighted that the implementation of the CMIASP gender action plan has been limited to ensuring that women are represented in the WUAs, are included in the staff fielded by the NGOs and are being engaged as community organizers. Apart from ensuring the administrative compliance with some of the requirements of the gender action plan, DOI has no capacity for a more dynamic implementation of the gender plan. Nonetheless, CMIASP criteria that the project adhere to Government policy requiring at least 33% women's representation in all registered WUAs has brought about a change with opposition to the idea of women's involvement in WUA committee gradually diminishing. However, as women's participation is deemed to be token this highlights the need for extra capacity building trainings to women WUA executive members to enable them to participate meaningfully vis-a vis local elites and male counterparts.

73. The availability, access, and use of water for irrigation will increase agricultural productivity significantly. Irrigation intervention will lead to greater water availability within the household. Access to greater volumes of water is expected to result in better hygiene and sanitation practices and better health overall. Improved access to water will release women from water-collection chores and allow women to invest more time in irrigated agriculture related activities. Additionally, it will increase the social capital of women as a group, more even spread of demand for agricultural labor leading to reduced male outmigration with positive social impacts to women and children; increase household food security and more balanced nutritional intake; and gradually increase women's control over resources.

I. Gender Equity and Social Inclusion Plan

74. To ensure that women are provided with opportunities to fully participate in the proposed project, the selection of subprojects and public meetings will require that women take an active part (33% participation by women in all key consultations). The fact that women are the de facto heads of many households due to male out-migration will be leveraged to institute greater gender balance in community leadership and in water users and farmer group committees. The WUA constitution will provide for either the husband or the wife as an eligible member in the WUA. Executive committee formation will have 33%

representation of women. The project will promote women in key leadership positions (chair, secretary, and treasurer) in 50% of the WUAs.

75. All elected WUA women officials will receive technical and leadership training. Training to WUA will include an orientation session on gender. Social Mobilizers hired for WUA strengthening will be 80% women and from the same districts that they are assigned to. The project will promote women farmers as leader farmers by ensuring at least 35% of the leader farmers trained on certified training of trainer (TOT) are women. The agriculture development plans developed will ensure the need and priorities of women farmers are addressed and 40% of the farmer group members trained will be women farmers. Project staff/consultants will be provided with GESI sensitization training in line with the irrigation policy and the GESI guideline of the DOI. Equal access to agri-extension services and equipment is ensured in the WUA norms for female-headed households. The subproject will provide separate training sessions for women and disadvantaged groups, support gender-sensitive and inclusive procedures and provisions in the WUA; and incorporate women's needs in system design and project activities through the implementation of the consultation, participation and communication plan. The GESI plan is prepared and provided as a separate document.

J. Vulnerabilities and Risks

76. Most rural households rely on a combination of subsistence farming and daily wage labor for their livelihood. For small and marginal farmers, and the landless the situation is more tenuous as they depend on daily wage labor that is generally available in the peak agricultural seasons. Consequently, the economic security of rural households is in a fragile state and susceptible to idiosyncratic shocks.

77. Rural households that do not have the opportunity to more secure employment in either urban areas or overseas are driven to adverse coping strategies involving increased debt levels, reduced consumption and greater reliance on child labor. In years of national food deficit, there is little option but to look across the border to India. The critical importance of food sufficiency for Nepal was exposed during the 2008 food crisis when the Indian government banned exports of rice. The WFP estimates that food price increases could potentially raise poverty incidence to 50%. More than 90% of households' external shocks (drought, hailstorms, floods, landslides, and employment disruption) immediately result in household food shortages.

K. Impacts of Irrigation on Poverty

78. Irrigated agriculture is one of the critical components of food production, contributing to maintaining food security and reducing rural poverty. The project has improved access to irrigation water to 57% of rural poor households with landholdings less than 1.0 ha in the terai, and to 51% of the rural poor with less than 0.5 ha in the hills. Project selection criteria has successfully reached hitherto excluded groups: 52% beneficiaries comprise *Janajatis*, 4% *Dalits*, and 44% Brahmin/Chhetri castes. The targeting criteria of landholding size correspond to areas with relatively greater numbers of marginalized and poor farmers from disadvantaged castes and ethnic groups.

79. The expected benefits include, increased crop production (yield improvement) and increased farm income; increased cropping intensity and crop diversification opportunities and the feasibility of year round crop production activities; increased farm employment—more employment opportunities for farming families as well as for hired laborers; increased farm consumption with significant implications for reducing food insecurity; reduced crop prices allowing access to food for all, which is more beneficial to landless and subsistence

families and provides better nutrition intake; multiple uses of water for bathing, washing, livestock and home gardens.

80. Small and medium farmers are most responsive to new ideas and adopt improved agricultural technology when irrigation water is assured and reliable. The improvement of FMIS surface and ground water irrigation, and the adoption of improved farming practices are projected to increase cropping area/intensity and yield in the project area. Most of this improvement would come from increased production. Diversification into vegetables and other high value crops is expected to take place in all seasons. These increases will take place as a result of more reliable water supply and availability, greater farmer involvement in planning and management of the FMIS schemes, better on-farm water management, and intensive agricultural extension with support for supply chain and marketing management. At the same time expansion of effective cropping area is projected and increase yields. It is anticipated that without the project there will be little change in the current level of production or cropping.

81. The project will improve food security, increase income, and diversify diets for project beneficiaries across 35 districts of the eastern and central development regions. The very poor, poor and moderately poor will get a relatively greater share of incremental benefits from irrigation development. This will occur through expanded employment opportunities, stable and secure employment due to increased intensity of cropping, improved yields and new farm enterprise/technology mixes, more evenly spread farm labor opportunities, improved wage rates, reduced outmigration, improved security against impoverishment, lower food prices and better nutrition.

82. Access to food by the very poor and poor through their through their own increased production or enhanced purchasing power to buy food would be the most effective way to move these people out of poverty, particularly in low productivity areas. Crop intensification, diversification, and market-oriented production make food available and affordable for the poor and rich alike. Nevertheless, the main beneficiaries of low and stable food prices will be the very poor, poor, and moderately poor in the project areas as they tend to be the net buyers of food, and spend a major part of their monthly expenditure on basic food.

83. Hence, the nature and magnitude of these employment opportunities originating from access to irrigation have large implications for the reduction of poverty and income inequality within a region. The policy goal, of an irrigation command, is to reduce this disparity. The Nepal INPIM study (2012) on WUAs documents that where systems generated significant returns, the WUAs were observed to be vibrant and encouraged to take a further role beyond simply managing the system, leading to an upward spiral with significant improvements in their quality of life. A common theme running across FMIS was that if farmers see a need for collective action they usually have a system for carrying out the needed tasks.

84. A recent survey of a sample of 10 CMIASP subprojects representing the central and eastern development regions show that average cropping intensity in irrigated land reached 248%. The cropping intensity was slightly higher in the terai at 259% than in the hills (241%). The study also revealed that overall livelihood conditions of the beneficiary households had improved significantly after the implementation of CMIASP. The distribution of beneficiaries showed 57% *Janajatis*, 40% *Brahmin/Chhetris* and 4% *Dalits* (DOA 2013).

IV. STAKEHOLDER ANALYSIS AND CONSULTATION

85. A fundamental principle of participation is that all legitimate stakeholders be heard in particular, women and other disadvantaged groups (DAGs) that have traditionally been excluded, such that benefits reach the broadest possible cross section of people. This ensures that the project will be designed and implemented as per the needs, capacities and constraints of those benefiting.

86. Participation supports good governance, citizenship, and accountability of the state. It promotes social inclusion of disadvantaged groups and equitable economic growth. The importance of participation cuts across the five themes of the Paris Declaration on Aid Effectiveness: ownership, harmonization, alignment, managing for results, and mutual accountability.

87. The project's primary stakeholders are households in the project area that will benefit from more reliable and adequate irrigation water. Other stakeholders also play important roles in project implementation and need to be engaged in various ways.

A. Consultation with Key Government Line Agency Officials

88. Stakeholder analysis is the means to identify types of stakeholders acting at different levels to develop and implement the project. Since, these groups interact intensively within communities and at district level; their opinions and interactions guide and influence project outcome.

89. The first stakeholder consultation brought together government officials of DOI, IDD, IDSD, and DOA, and staff and consultants of ADB, WRPPF and ISPMC. A second consultation was held with the same participants to obtain feedback on the proposed implementation arrangements and roles and responsibilities. The purpose of these consultations was to improve project processing and quality during implementation of the ADB-financed Community Managed Irrigated Agriculture Sector Project-Additional Financing (CMIASP-AF).

90. The primary objective of the first consultation was to

- (i) identify key stakeholders to determine inclusion in CMIASP-AF processes;
- (ii) identify key issues in the sector; and
- (iii) agree on the core development problem to set the stage for downstream participatory activities.

91. During the consultation process the CMIASP-AF Social Development and Safeguards Specialist provided the participants with an introduction to the concept of the problem tree and stakeholder analysis, and how the end product of this analytical and planning process results in the formulation of the Design and Monitoring Framework (DMF).

92. The participants analyzed the current situation, identified the development problem, and the interrelationship of causes at different levels. The consultation concluded with an agreement on the core development problem (outcome), the immediate causes of the development problem (outputs), identification of key stakeholders (Annex 3), and perceived problems (Annex 4). These include: unreliable and inadequate access to irrigation water; limited institutional capacity of government and WUA to support participatory irrigation management; and traditional farming practices.

93. It was also explained how the DMF communicates how the proposed project will achieve results by converting a series of inputs into a defined set of outputs that are

expected to achieve a desired development outcome. Based on the problem analysis a draft DMF was prepared and submitted for discussion.

B. Field Consultations with Primary Stakeholders

94. Discussions were held with men and women beneficiaries and WUA executive members of Paliya and Kankai irrigation subprojects in Jhapa district of the eastern development region. Site visits, and consultations brought to light beneficiary concerns. They include the following:

- lack support and technical know how in constructing and maintaining field channels
- lack extension to introduce non staple crops
- inadequate availability of inputs, particularly fertilizer but also seed which has constrained irrigation intensity and productivity/production
- more influential men dominate WUA decisions
- women, marginalized and poor farmers are not given opportunity to participate in WUA decisions
- water distribution does not reach tail ends in dry season
- difficult to mobilize resources from tail enders when they do not receive water
- limited availability of farm labor due to male outmigration
- unaware of subproject selection criteria
- lack information on water distribution schedule
- water scarcity at tail end due to the unwillingness of upstream users to allow water to flow until their fields are irrigated
- upstream users do not adhere to water rotation schedule
- membership based on landownership constrains women's representation in the WUA executive committee, especially in the terai
- WUA unable to penalize ISF defaulters in agency managed irrigation systems (AMIS)
- weak institutional governance of WUA

95. Problem analysis and stakeholder consultations were also held with officials of IDD and DADO, NGO staff and COs. Inputs provided by the district officials of irrigation and agriculture are incorporated into the stakeholder analysis report.

96. Major problems associated with farmer inability to increase irrigated agriculture production to its full potential during the stakeholder consultations are summarized and include the following:

- field channels not included in subproject to improve water efficiency;
- limited government capacity in social mobilization and participatory irrigation management;
- political interference in the selection of subprojects;
- frequent staff transfer and weak interagency coordination;
- poor data base of irrigation subprojects;
- insufficient staff to promote joint team work between IDD/IDSD, DADO and WUA;
- weak institutional linkages between the departments/divisions of irrigation and agriculture;
- post construction activities such as water management and crop management not synchronized; and
- OFWM activities lagging

C. Key Areas for Participation

97. The problem analysis and stakeholder analysis provide the basis for understanding the views and perceptions of the stakeholders, and how they may be engaged systematically during implementation of the proposed project.

98. Women, the poor and disadvantaged groups face considerable obstacles to participating and benefiting. These include poverty, social exclusion, domination by large farmers; lower literacy levels, limited access to services and markets; and consequently low absorptive capacity regarding new development opportunities. The consultation, participation and communication (CPC) plan is based on the stakeholder analysis and is prepared to ensure meaningful consultation is carried out on an ongoing basis throughout the project cycle; provide timely disclosure of relevant information that is understandable in the local language; is gender inclusive and responsive, and tailored to the needs of disadvantaged groups.

D. Key Stakeholder Communications Activities

99. In recognition of the importance of disseminating information to improve the effectiveness, relevance, and sustainability of development activities, and to contribute to good governance and the inclusion of women and disadvantaged groups it is recommended that the Central Project Management Office (CPMO) monitor the CPC Plan and report on the status of implementation of each of the activities listed below in their progress reports and during ADB review missions.

1. Irrigation Development Division/Irrigation Development Subdivision

(i) The IDD/IDSD will be responsible for organizing trimester SMU meetings as the main mechanism for keeping district level stakeholders informed about project progress.

(ii) Either through SMU meetings or through interactions with specific government agencies, the IDD will facilitate linkages to other development initiatives in the same district through communications with DDC/VDC and other line agencies. The SMU will inform the DDC about subprojects assisted by the project.

(iii) As the conveners of SMU meetings, the IDD/IDSD will facilitate the registration and resolution of any complaints by beneficiary land donors.

(iv) The IDD/IDSD will ensure that information about subproject costs and contracts for construction is posted in a public location in the VDC.

2. Social Development Specialist and Social Mobilizers

(i) The Senior Social Development Specialist will produce guidelines and visual materials for communicating the project to communities and the Social Mobilizers (SMs) with support of the Social Development Specialist (SDS) based in the RIDs will implement the information dissemination program in subproject areas and generate applications from potential beneficiary groups.

(ii) Once the subprojects are selected for preparation, the SMs will screen for landless sharecroppers/tenant farmers, women and marginal Dalit and Janajati farmers, and identify specific measures for ensuring their meaningful participation in

subproject preparation and implementation. The SDS will supervise the SMs in this and endorse the activity plans.

(iii) The SMs will facilitate the subproject preparation process, including negotiating ICWM and agriculture development plans with the assistance of Association Organizer (AOs) and Junior Technician and Junior Technical Assistant (JT/JTAs).

(iv) The SMs will raise awareness among communities of the project's grievance redress mechanism and facilitate receiving complaints by the WUA from the aggrieved persons.

(v) The SDS will ensure that information about subproject costs and contracts for construction is posted in a public location in the VDC.

3. Regional Directorates of Irrigation and Agriculture

(i) The Regional Directorates will contribute to the preparation of communications about CMIASP-AF achievements, and develop information on agricultural development and integrated crop water management (ICWM) plans.

(ii) The RID and RAD will report on the progress and quality of work through the MIS and other means requested by the CPMO.

(iii) The RID and RAD will prepare and report gender and social inclusion impacts either through convening a meeting or disseminating a newsletter.

4. Department of Irrigation and its Central Project Management Office

(i) The DOI will be responsible for organizing Project Steering Committee (PSC) meetings twice a year and will be the main mechanism for keeping central level stakeholders informed of project progress and benefits.

(ii) Through PSC meetings the DOI will facilitate decision support for ensuring strong intra and inter agency coordination and collaboration.

(iii) The CPMO will produce visual materials for communicating the project to communities.

(iv) The CPMO will develop and maintain a project website that includes current project status and all project documents. The website will also contain gender and social inclusion impacts.

E. Consultation, Participation and Communication Plan

100. The objective of the consultation, participation and communications (CPC) Plan is to describe how the project will ensure meaningful participation of all stakeholders in project implementation and monitoring. The CPC Plan recognizes that beneficiaries participate from different starting points and cultural experience, and that this has implications on how beneficiaries will participate and contribute. It also ensures that those ultimately responsible for operation and maintenance (O&M) are allowed to develop the required capacity for effective management and implementation.

101. The CPC Plan is prepared to ensure local ownership of each subproject, ensure inclusion of all types of beneficiaries in participation processes and benefit distribution, and ensure dissemination of results and lessons learned to the wider community. The CPC Plan is prepared and submitted as a separate document.

V. SOCIAL SAFEGUARDS

102. ADB's Safeguard Policy Statement has one environmental safeguard, and two social safeguards: involuntary resettlement and indigenous peoples. The social safeguards reports on Involuntary Resettlement and Indigenous Peoples are prepared and submitted as separate documents.

VI. PEACE ASSESSMENT

103. The project was assessed for the potential risks linked to social conflicts using Nepal's peace-building tool (formerly called the peace filter). The tool was developed through the joint work of the United Kingdom's Department for International Development and the World Bank and aims to support the conflict- and post-conflict sensitive approach adopted by ADB's country partnership strategy 2010–2012. The tool helps to identify opportunities for the project to build peace and social cohesion. The Peace Filter for project design and implementation is prepared and submitted as a separate document.

VII. REFERENCES

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VIII. ANNEXES

A. Annex 1. Gender Division of Tasks (Hill)

SN	Activities Irrigation/Agriculture														
		Dobhan/ Okhaldhunga		Hinguwakhola/Terahthum		Milti khola/ Ramechhap		Labunglewa/Panchthar		Diwali/ Makwanpur		Ripini Dhotar/ Sindhupalchowk		Average Hill	
		Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	M (%)	F (%)
1	Choice of Crop to be grown	52	48	49	51	66	34	63	37	60	40	50	50	57	43
2	Mobilization of labor	46	54	62	38	38	62	47	53	65	35	50	50	51	49
3	Land Preparation	71	29	73	27	87	13	73	27	60	40	50	50	69	31
4	Transplanting/sowing	27	73	32	68	32	68	27	73	40	60	35	65	32	68
5	Composting/fertilizer application	63	37	60	40	65	35	50	50	50	50	30	70	53	47
6	Weeding	52	48	36	64	31	69	35	65	40	60	50	50	41	59
7	Irrigation (application of water)	68	32	66	34	74	26	63	37	45	55	60	40	63	37
8	Maintenance of irrigation canal	71	29	54	46	56	44	47	53	60	40	50	50	56	44
9	Harvesting	41	59	50	50	45	55	49	51	50	50	40	60	46	54
10	Threshing	70	30	68	32	61	39	65	35	60	40	60	40	64	36
11	Transportation of crops & straw	53	47	48	52	49	51	47	53	55	45	50	50	50	50
12	Storing	30	70	50	50	51	49	50	50	40	60	40	60	44	56
13	Processing	20	80	47	53	53	47	57	43	50	50	30	70	43	57
14	Purchasing seeds/fertilizers	74	26	66	34	68	32	72	28	65	35	50	50	66	34
15	Sales of crops and vegetables	58	42	27	73	33	67	25	75	60	40	30	70	39	61

Annex 1. Gender Division of Tasks (Hill)...cont'd

SN	Activities Household Chores	Dobhan/ Okhaldhunga		Hinguwakhola/Terahthum		Milti khola/ Ramechhap		Labunglewa/Panchthar		Diwali/ Makwanpur		Ripini Dhotar/ Sindhupalchowk		Average Hill	
		Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	M (%)	F (%)
		16	Cooking	12	88	7	93	8	92	8	92	20	80	20	80
17	Care of Children and old Person	22	78	45	55	51	49	47	53	30	70	40	60	39	61
18	Fetching Water	25	75	51	49	55	45	50	50	20	80	50	50	42	58
19	Collecting Firewood/Grasses	46	54	20	80	16	84	14	86	50	50	40	60	31	69
20	Purchasing household items	67	33	47	53	49	51	42	58	40	60	60	40	51	49
	Livestock														
21	Livestock care	37	63	62	38	60	40	70	30	55	45	50	50	56	44
22	Purchasing livestock	70	30	85	15	84	16	87	13	70	30	50	50	74	26
23	Sales of livestock	61	39	69	31	69	31	67	33	65	35	50	50	63	37
24	Sales of milk and ghee	40	60	51	49	60	40	53	47	40	60	30	70	46	54

Source. SPPR Reports. DOI.

B. Annex 2. Gender Division of Tasks (Terai)

SN	Activities														
		Bagaiya Jamuni/ Bara		Neurenipaini/ Chitwan		Paliya		Tanting		Kalikosi		Bhulke		Average Terai	
		Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	M (%)	F (%)
	Irrigation/Agriculture														
1	Choice of Crop to be grown	90	10	50	50	73	27	53	47	95	5	76	24	73	27
2	Mobilization of labor	80	20	80	20	79	21	52	48	95	5	57	43	74	26
3	Land Preparation	70	30	72	28	87	13	74	26	96	4	84	16	81	19
4	Transplanting/sowing	40	60	28	72	76	24	57	43	33	67	44	56	46	54
5	Composting/fertilizer application	65	35	56	44	80	20	54	46	90	10	87	13	72	28
6	Weeding	50	50	32	68	64	36	47	53	25	75	36	64	42	58
7	Irrigation (application of water)	85	15	64	36	89	11	73	27	90	10	84	16	81	19
8	Maintenance of irrigation canal	80	20	46	54	89	11	73	27	89	11	83	17	77	23
9	Harvesting	45	55	48	52	45	55	46	54	24	76	44	56	42	58
10	Threshing	75	25	62	38	81	19	67	33	75	25	78	22	73	27
11	Transportation of crops & straw	50	50	46	54	80	20	55	45	48	52	65	35	57	43
12	Storing	50	50	50	50	29	71	53	47	49	51	62	38	49	51
13	Processing	20	80	54	46	25	75	42	58	56	44	53	47	42	58
14	Purchasing seeds/fertilizers	60	40	68	32	48	52	51	49	53	47	52	48	55	45
15	Sales of crops and vegetables	55	45	26	74	86	14	57	43	94	6	43	57	60	40

Annex 2. Gender Division of Tasks (Terai)...cont'd

SN	Activities Household Chores														
		Bagaiya Jamuni/ Bara		Neurenipaini/ Chitwan		Paliya		Tanting		Kalikosi		Bhulke		Average Terai	
		Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	M (%)	F (%)
16	Cooking	10	90	8	92	12	88	7	93	1	99	1	99	7	93
17	Care of Children and old Person	15	85	56	44	25	75	28	72	7	93	14	86	24	76
18	Fetching Water	30	70	56	44	20	80	15	85	1	99	9	91	22	78
19	Collecting Firewood/Grasses	40	60	14	86	34	66	26	74	4	96	15	85	22	78
20	Purchasing household items	65	35	48	52	51	49	51	49	56	44	48	52	53	47
	Livestock														
21	Livestock care	50	50	66	34	33	67	34	66	29	71	41	59	42	58
22	Purchasing livestock	70	30	84	16	62	38	49	51	64	36	35	65	61	39
23	Sales of livestock	50	50	70	30	62	38	62	38	64	36	35	65	57	43
24	Sales of milk and ghee	45	55	54	46	36	64	56	44	56	44	43	57	48	57

Source. SPPR Reports. DOI.

C. Annex 3. Stakeholder Analysis

Stakeholder	Stakeholder's Interest	Perceived Problem	Capacity	Mandate
Department of Irrigation (DOI)	<ul style="list-style-type: none"> increase irrigation water efficiency improve reliability and adequacy of irrigation water and drainage management improve on-farm water management (OFWM) motivate staff by providing opportunities & facilities develop irrigation which is self sustainable generate resources for O&M transfer irrigation management to beneficiaries in the case of AMIS promote farmer ownership of subprojects 	<ul style="list-style-type: none"> damaged irrigation infrastructure poor maintenance in most AMIS limited capacity in social mobilization and participatory irrigation management staff has limited exposure to good practices political interference in the selection of subprojects "unionism" frequent staff transfer lack of consistency in policy implementation lack budget and motivation weak inter-agency coordination lack innovation different donors have different requirements 	<ul style="list-style-type: none"> strong capacity in design and construction interdisciplinary team of professionals available at central level some capacity in social, environmental and gender exists at central level limited number of non-engineering staff 	<ul style="list-style-type: none"> develop medium to large surface water systems (>25 ha in the hills and >200 ha in the terai) provide sustainable irrigation facilities and increase the irrigated area of the country monitor irrigation systems provide inputs for policy formulation
Regional Irrigation Directorate (RID)	<ul style="list-style-type: none"> sub-project approval monitoring 	<ul style="list-style-type: none"> poor data base of irrigation subprojects insufficient staff to promote joint team work with IDD/IDSD and DADO political interference in the selection of subprojects staff lack motivation and innovation weak linkages between RID and IDD/IDSD weak coordination between RID and RAD 	<ul style="list-style-type: none"> interdisciplinary team of professionals available some capacity in social, and environment 	<ul style="list-style-type: none"> coordination between DOI and IDD/IDSD
Irrigation Development Division/ Irrigation Development Subdivision (IDD/IDSD)	<ul style="list-style-type: none"> develop water courses to improve water efficiency coordinate programs of IDD/IDSD and DADO subproject appraisal and implementation procedure should be determined by DOI promote crop water management activities WUA institution building 	<ul style="list-style-type: none"> field channels not included in subproject to improve water efficiency joint team work with IDD/IDSD, DADO and WUA lacking staff lack motivation limited interaction between IDD and WUA after subproject completion post construction activities such as water management and crop management not synchronized poor collection of ISF in AMIS 	<ul style="list-style-type: none"> capacity in design and construction insufficient staff for interacting with WUA (3 sociologists at central level, 1 in each RID and 1 or 2 AOs in IDD (all positions not yet filled) AOs lack skills in providing support to WUA, group formation, WUA 	<ul style="list-style-type: none"> Implement policies and programs of DOI

Stakeholder	Stakeholder's Interest	Perceived Problem	Capacity	Mandate
		<ul style="list-style-type: none"> • insufficient budget for O&M • lengthy process and appraisal of subprojects • OFWM activities lagging • infrastructure rehabilitated but productivity not increased as anticipated • effective participation of beneficiaries is lacking 	mobilization, conflict resolution	
Department of Agriculture (DOA)	<ul style="list-style-type: none"> • Facilitate farmer access to improved technology • Maximize farm profitability • Facilitate irrigated agriculture extension to ISP areas 	<ul style="list-style-type: none"> • Limited agriculture extension staff to support intensive irrigated agriculture services to ISP areas • Limited budget and facilities 	<ul style="list-style-type: none"> • Interdisciplinary team of professional at central level 	<ul style="list-style-type: none"> • Provide agriculture extension services • Develop programs
Regional Agriculture Directorate (RAD)	<ul style="list-style-type: none"> • Monitor and supervise DADO 	<ul style="list-style-type: none"> • Limited budget and facilities to undertake supervisory functions 	<ul style="list-style-type: none"> • Limited agriculture extension staff 	<ul style="list-style-type: none"> • Facilitate and support DADO
District Agriculture District Office (DADO)	<ul style="list-style-type: none"> • improve agriculture technology and move farm production beyond subsistence • motivate farmers to grow high value crops in winter and spring • access financial support to conduct irrigated agricultural activities • increase field staff: one field extension staff per VDC is needed 	<ul style="list-style-type: none"> • farmers do not have access to agriculture technology and equipment (e.g. power tillers and threshers) • DOA and its extension directorate lack capacity to adequately support irrigated agriculture • staff not able to motivate farmers to grow high value crops • lack market linkages, farmers want assured market as they are risk averse • late delivery of fertilizer by AIC • inadequate number of vehicles, motorcycles constrain interaction with WUA and farmers • JT/JTA has limited knowledge on modern irrigated agricultural technology • unable to meet farmer demand as staff have limited budget to travel to irrigation areas • male outmigration has impacted labor availability for farming activities • limited budget for irrigated agriculture extension • regular visits to farm plot is difficult as field staff travel by bicycle • must follow its own annual program and budget and hence difficult to synchronize activities with IDD 	<ul style="list-style-type: none"> • DADO unable to provide intensive support services to irrigation schemes. • Has 4 agricultural service centers (ASC) per district. One ASC looks after 8-10 VDCs covering 2500-4000 farm households. Each ASC staffed by a JT and 2 JTAs. One JT/JTA looks after 3 VDCs • large service coverage, do not use modern communication technologies 	<ul style="list-style-type: none"> • implement programs of DOA

Stakeholder	Stakeholder's Interest	Perceived Problem	Capacity	Mandate
WUA	<ul style="list-style-type: none"> WUA institution building equitable distribution of water across all reaches of the system improve farmer confidence in the system for long term sustainability increase women's representation in WUA executive committee access trainings on improving water management and irrigated agriculture performance 	<ul style="list-style-type: none"> landless are not members of the WUA, and have no obligation to contribute in cash and kind during rehabilitation landless not motivated to participate in LEP as it is perceived to be less profitable compared to their current wage labor returns/day water scarcity at tail end due to the unwillingness of upstream users to allow water to flow until their fields are irrigated upstream users do not adhere to water rotation schedule membership based on landownership has constrained meeting 33% women's representation in WUAs especially in the terai limited capacity to institutionalize democratic management WUA unable to penalize ISF defaulters in AMIS 	<ul style="list-style-type: none"> able to contribute labor and cash shared group interest facilitate dialogue on water distribution 	<ul style="list-style-type: none"> operate and manage system
Beneficiary men and women farmers	<ul style="list-style-type: none"> increase access to reliable and adequate irrigation water increase farm production improve skills on on-farm water application (how much, when, and for what crops) access support in the production and marketing of high value crops participate in exposure visits to model FMIS 	<ul style="list-style-type: none"> lack support and technical know-how in constructing and maintaining field channels lack extension to introduce non-staple crops inadequate availability of inputs, particularly fertilizer but also seed which has constrained irrigation intensity and productivity/production more influential men dominate WUA decisions women, marginalized and poor farmers not given opportunity to participate in WUA decisions water distribution does not reach tail ends in dry season low lying areas become water logged and winter cropping is not possible difficult to mobilize resources from tail enders when they do not receive water limited availability of farm labor due to male outmigration unaware of subproject selection criteria lack information on water distribution schedule 	<ul style="list-style-type: none"> willing to contribute cash and/or labor labor force potentially available in the village but due to lack of employment many migrate seasonally or permanently women more able to mobilize resources. 	NA
NGOs	<ul style="list-style-type: none"> interest in attracting resources advocate on behalf of beneficiaries 	<ul style="list-style-type: none"> some NGOs more political than developmental district level NGOs lack qualified staff with technical skills and knowledge about irrigation, agriculture and geography 	<ul style="list-style-type: none"> national level NGOs working in agriculture & rural development have technical staff and able to provide support in 	NA

Stakeholder	Stakeholder's Interest	Perceived Problem	Capacity	Mandate
			extension <ul style="list-style-type: none"> • able to focus on institutional processes with a concern for gender issues, involving the poor and DAGs • local NGOs have capacity in social mobilization but depend on short term grants/contracts • limited number of qualified NGOs at the district level 	
Development Partners working in irrigation and irrigated agriculture	<ul style="list-style-type: none"> • interest in the country's development • build government capacity at all levels • avoid duplication and promote collaboration • share good practices • ensure key agencies monitor progress 		<ul style="list-style-type: none"> • financial and technical capacity 	

D. Annex 4. Problem Tree Analysis

