

Manager questionnaire: Snowmelt dependent systems in The United States and Kenya

This survey is being conducted by Indiana University, Princeton University, and the University of Nairobi, under the direction of Dr. Tom Evans in the Department of Geography at Indiana University (Email address: cipec@indiana.edu). The focus of this project is on the ability of farmers to adapt to changes in the availability of water in this area. Every precaution will be taken to maintain the complete confidentiality of your responses and personal information. If you choose to participate, you may refuse to answer certain questions, or you may stop participating at any time. Your decision whether or not to participate will not affect your current or future relations with the researchers, Indiana University, or local water associations. Your responses will be summed together with those of roughly 500 other households in Kenya and only general averages from the analysis will be reported. You will not be identified in any published results from this project. This survey should take approximately one hour to complete. Respondents will not receive payment for participating. You indicate your voluntary consent by participating in this interview. If you have questions about your rights as a research participant or have concerns about the study, you may contact the Indiana University Human Subjects Office at irb@iu.edu.

1. Province: **PROV**

2. District: **DIST**

3. Location: **LOC**

4. Sub-location: **SLOC**

5. Ranch: . . . **RNCH** . . . 6. Group ranch: . . . **GRNCH**

7. Village/Locality: **VILL**

8. WRUA **WRUA**

9. Scheme name **CSNM**

10. Manager number **MANNUM**

11. What is your role with this water scheme?. . . **ROLE**

12. Name of enumerator: **ENUM**

13. Date of interview **DATE** . . . Day Month Year

14. Start and end time: **STIME / ETIME** . . . Start time End time

15. Name of supervisor: **SUPER**

16. Date supervisor checked **SUPCH** . . . Day Month Year

17. Name of data entry staff **DENTRY**

Section 1: Water user association attributes19. How and why was this water project/scheme established? **CSOEST**

20. Is your water project for irrigation and domestic use or only for domestic use? **PROJIRR**

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21. For your water project what are?:

Villages name VILLNAM	Number of HH NUMHH	Members/Connections MSIZE	Shamba average size SHASIZ	How many HH in this village that are not members and could be NONMB

22. What are the reasons why non members have not joined? **NOTJOIN**
 Can't afford to pay membership fee
 Network cannot reach them
 Other

23. Does your project allow new members to join? **NEWMEM** YES NO24. If Yes/No what are the reasons? **NEWMEMEXP**

25. How has the number of members in your scheme changed in the past 5 years? **CSCHG**
 Greatly increased
 Slightly increased
 No change
 Slightly decreased
 Greatly decreased
26. How many members there were when the water project was created? **NUMMBCR**

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27. Are there HH from other villages who are members? **OTVILLME** YES NO28. If yes which villages? **OTVILLMEXP**

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29. Has the number of people in your community/village increased in the past 10 years? **DEMINC**
 Greatly increased
 Slightly increased
 No change
 Slightly decreased
 Greatly decreased

Section 2: Land/water assets and Change

30. What are the sources of water for your water project/scheme? **RVRSRC**

31. How did most of your members originally obtain rights to the land they use (check all that apply)? **LNDRGHT**

Purchased it
 Inherited it
 Rented it
 Caretaker
 Communal

Rights granted by:
 Chief or local authority
 Elders
 Community
 Neighbours
 Relatives

32. How has the total area of land your members cultivate changed in the last 5 years? **LND5CHNG**

Greatly increased
 Slightly increased
 No change
 Slightly decreased
 Greatly decreased

33. If there has been a change, what is the main reason for this change? **LND5CHNGEX**

34. How has the amount of land your members irrigate changed in the last 5 years? **IRRCHNG**

Greatly increased
 Slightly increased
 No change
 Slightly decreased
 Greatly decreased

35. If there has been a change, what is the main reason for this change? **IRRCHNGEX**

Section 3: Agricultural activities

36. How much of the water that your members use for irrigation comes from the following sources?

	All	Most	Half	Some	None
Rivers/Streams WfromRiv					
Boreholes WfromBore					
Scheme hookup WfromSch					
Harvested rainfall WfromR					

37. Has the amount of livestock your members own changed in the last 10 years? **LIVCHA**

Greatly increased Slightly increased No change Slightly decreased Greatly decreased

38. What part of your members' income comes from their livestock? **LIVINC**

All Most Half Little None

39. What is the proportion of pastoralist in your community? **PASTCOM**

All Most Half Little None

40. What is the proportion of land that they own/use? **PASTLAND**

All Most Half Little None

41. Does your association have access to a project tank/reservoir? **RESER**

Yes No No response

42. If yes, what is this water mostly used for? **RESUS** Irrigation Domestic Livestock Other:

43. Is there a gauge at the main headgate of your system that measures how much water enters the main canal?

GAUGEMES Yes No No response

44. What is the size of your water project members' pipe? **PIPSIZ**

45. What is the size of the intake pipe from the river to your water project?

INTAKSIZEA

INTAKSIZEB

Section 4: Rules

46. Which of the conditions need to be satisfied in order to become a member of the water project/scheme (check all that apply): **MBRRUL** Land ownership Pay membership fees Be authorized by chief/leader Be a member of specific community/ranch/village Other

47. Which of the conditions need to be satisfied in order to maintain membership of the water project/scheme (check all that apply): **MBMANT** Land ownership Pay maintenance fees Contribute with labour Attend scheme meetings Other

48. How is compliance with rules monitored and enforced (check all that apply)? **MBRMON**
 No monitoring Monitored by community members Monitored by scheme board managers
 Monitored by chiefs Monitored by others Monetary sanctions Water use is cut off Definitive expulsion from scheme Other sanctions No sanctioning Other

49. How many people in this area are pumping water directly from the river? **DIRPUM**
 None 1 to 5 6-10 11 or more

50. Do they have permits? **PERMI** All Some None

51. What happens when people (illegally) pump water from the river? **WATPUM**
 Nothing happens Monetary sanctions Other sanctions Other

52. Can you please describe the last couple cases of illegal tampering with the water network?? **ILLTAMP**

53. What happens when people tamper with the water pipes/scheme pipes? **TAMPIP**
 Nothing happens Monetary sanctions Pipe is cut off Definitive expulsion from scheme
 Other sanctions Other

54. Can a member of your water project get a second connection to your project? **SECCON** Yes No

55. Are there members of your project who are connected to ther water projects? Which ones? **OTHERPRO**

56. Do members buy there own pipes? **OWNPIPES** Yes No

57. Do all members have the same size pipes? **SIZPIP** Yes No

58. On the first occasion that a member does not pay in time what are the consequences? **FIRSTC**

Nothing happens Monetary sanctions Other sanctions Cut off from water use Other

59. What happens if a member continues not to pay? **REPNOTP** Nothing happens Increased monetary sanctions Other sanctions Cut off from water use Other

60. What happens if a member does not contribute with his labour duties to the scheme? **NOLAB**

Nothing happens Monetary sanctions Other sanctions Cut off from water use Other

61. Who is responsible for monitoring illegal water use activity? **MONILL**

No monitoring Self monitored by community members Monitored by scheme board managers Monitored by chiefs Monitored by WRUA Monitored by WRMA Care Taker Other

62. Have there been cases where households have reported illegal water use to a member of the scheme board in the last year? **HHILL** Yes No No response

63. How are cases of illegal water use resolved within your community scheme? **RESILL**

How is water distributed in your water scheme? **ROTPROP**

Rotational

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Proportional

Every day

Other

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64. Do you ration? If you do, describe the rationing schedule **RATIOEXP**

65. Do you think that participation in the WRUA prevents conflicts?**PREVCNF** Yes No No response

66. How has the schedule for rotation of water within the scheme changed over time? If it has changed, what was the reason for the change in the rotation schedule? **ROTCHG**

67. Which external organization plays an important role in resolving cases of illegal use? a **EXORG**

WRUA WRMA OTHER _____

68. If another community/scheme violates an agreement, what is the response of your community/scheme? **ASSOCRPS** Report to WRUA

Report to chiefs Report to WRMA Report to chairman Other No response

69. Does WRMA play an important role in the management of water within your community/scheme or nearby communities/schemes? **GVTROLWM**

Yes No No response

70. Does WRMA respect the authority of your community/scheme to determine and implement its own rules for water and land use? **EXREC**

Yes No No response

71. Please explain your answer to the previous question: **EXRECEX**

72. How would you describe the level of trust you and your members have in the WRMA? **EXTRUST**

No trust Some trust High trust

73. Have you gone to a court in the last 5 years to establish or defend a water right? **CRT**

Yes No No response

74. If yes, were you successful? **CRTSCS**

Yes No No response

75. Did the 2002 water law act affect the ability of your community to get water for irrigation? **LAW**

Yes No No response

76. If so, how? **LAWEX**

77. Are water project members required to attend water projects meetings? **REQMET** Yes No

What happens if they don't attend? **REQMETEXP**

78. How is your water project management structured? **WPSTRUCT**

79. How are members of your water project management committee selected? **WPMEMSEL**

80. What type of meetings does your water project holds? **TYPEMEET**

Section 5: Disturbances and adaptation

For the disturbance identified, please fill out each of the subsequent columns: **DIST**

- 1) Evaluate the extent to which these disturbances are problematic for your community, ranking the first 5 (**1 IS WORST**)
- 2) Evaluate whether the trend has been increasing: YES/NO
- 3) Indicate (yes or no) whether your water project existing rules are adequate: YES/NO
- 4) Additional explanations

81.

Disturbances	1. Rank the 5 major disturbances to your community	2. Is this threat increasing YES/NO?	3. Existing rule is adequate? (Yes/no)	4. Explanations
Droughts				
Floods				
Declining water quantity				
Loss of soil fertility				
Price of water				
Price change of ag inputs				
Availability of new land				
Poor quality of infrastructure				
Regulatory-administrative changes				
Agri commodities price changes				
Access/transport to markets				
Access to capital				
Other				

Section 6: Trends

83. In your experience, has there been a general change in the amount of water that is available to your community/scheme? **WTRTRND**

- Greatly increased Slightly increased No change Slightly decreased Greatly decreased

84. If you perceive there to be a change in water availability, what do you think are the sources of this change?

WTRTRNDSRC
