

Course Name:
**Inter-Disciplinary Field
Research Methodology**

Total contact hours: 60

a. Classroom: 20 hours

b. Field based: 40 hours

Course Objective

This course seeks to lay a foundation for students to do inter-disciplinary water research. In formulating the course objectives and contents, the background and epistemological context of the programmes in which this course is proposed to be taught have been considered. Thus the course is designed to enable students with a background predominantly in the natural sciences to acquire an understanding of inter-disciplinary field research methodology. In keeping with the larger goals of the SAWA Fellows Programme and its predecessor Crossing Boundaries Project, the course enables students to systematically cross paradigmatic boundaries in water research. Thus it lays fundamental emphasis on the appreciation of paradigms in social science research, the distinction between methods and methodology and the relationship between paradigm, methodology and methods. However, it recognizes that some students have no prior experience or exposure to research methods at all, thus it includes elements both of qualitative and quantitative research design and methods.

Topic 1. What is inter-disciplinarity? Why do we need inter-disciplinary water research? How to conceptualise inter-disciplinary water research ? (2 hours)

Students need to understand why they should do inter-disciplinary water research and need conceptual entry points to do so. This needs to move beyond the clichéd need for a 'holistic' or 'balanced' approach. They need to be able to see the relationship between the social, ecological, hydrological and technological dimensions of water management. Before getting down to methodology, students need to understand: in what ways can we be inter-disciplinary in water research, and why?

Sub-topics: meaning of inter-disciplinarity, why we need an inter-disciplinary approach to water research, how to see inter-disciplinarity in water access and management; framing inter-disciplinary research questions in water

Optional sub-topics: instructors may want to engage with the difference between inter-disciplinary, multi-disciplinary and trans-disciplinary research, but for the target audience that is not absolutely necessary at this stage

Suggested exercise:

Ask students to think about

- a) The different ways in which water technologies impact institutions or society more broadly, or what happens when new technologies are introduced without considering their fit with the users practices and needs
- b) How ecological changes affect different social groups in different ways
- c) How some groups of people get more water than others simply because they are rich and powerful?

Suggestions for delivery: It would be useful if the conceptual frameworks for inter-disciplinary water research are first elaborated through a basic reading and then substantiated through a specific reading around that within the South Asian context.

Readings:

Kloezen, W., & Mollinga, P. P. (1992). Opening closed gates: recognizing the social nature of irrigation artefacts.

Karpouzoglou, T., & Vij, S. (2017). Waterscape: a perspective for understanding the contested geography of water. *Wiley Interdisciplinary Reviews: Water*, 4(3), e1210.

Topic 2. Paradigms, methodology and field research (2 hours)

1.1 Understanding the meaning of methodology: difference between method and methodology

The terms method and methodology are used inter changeably by students. In this sub component of the course, the difference between the two terms is elaborated.

Sub-topics: meaning of method, meaning of methodology, difference and relationship between the two

1.2 Paradigms in social research: positivism, interpretivism and critical social science research

Participants are introduced to the concept of paradigms in research. The fundamental differences across positivism, interpretivism and critical social science are elaborated. Understanding these differences is important as they shape the nature of the research enquiry. Further, appreciation of paradigms helps understand the different approaches to research design, and techniques of data collection and analysis. Students learn the basic differences across paradigms and how they influence approaches to research design, data collection and analysis.

Sub-topics: meaning of paradigm, importance of appreciating research paradigms, positivism; interpretivism, critical social science research; relationship between paradigm and research methodology;

Optional sub-topics: hermeneutics, ethnomethodology, phenomenology

Suggestions for delivery: Understanding the differences across paradigms is most effective when the differences in approach to research design, framing of hypotheses or research questions, approaches to sampling and establishing the domain of generalization across qualitative and quantitative approaches are elaborated. Thus this module should be used to explain the differences between a qualitative and quantitative methodology more broadly.

1.3 Understanding the meaning of field research: the basic premise of observation in natural settings

Field research is an approach that relies predominantly on observation of the subjects of their research in their natural settings. It is predominantly qualitative by definition, though quantitative measurements may be needed to specifically quantify certain variables or observe changes in parameters. This factor has been kept in mind in developing the contents of the rest of the course.

Sub-topics: meaning of field research, its relevance in water research: why do field research in water? Value of observation in specific contexts

Readings:

Social Research Methods. Qualitative and Quantitative Approaches. W. Lawrence Neuman. Third Edition. 1997, Chapter 4. The meanings of methodology.

Social Research Methods. Qualitative and Quantitative Approaches. W. Lawrence Neuman. Third Edition. 1997. Chapter 14. Field Research.

Topic 3: Ethics in field research(1 hours)

Ethics refers to a practice of not harming others. Like in every aspect of life, it is important to pay attention to ethics in research too. Ethical issues involve showing dignity and respect for respondents in the field, issues of confidentiality and the ethics of drawing on other people's research.

Topics covered: why ethics in the field, issues of confidentiality, using and citing other people's research, privacy and intrusion.

Readings. Social Research Methods. Qualitative and Quantitative Approaches. W. Lawrence Neuman. Third Edition. 1997. Chapter 17. Ethical and political issues in social research.

Topic 4: Field Immersion (phase 1)

(16 hours or 2 days in the field)

This component gives the students a hand-on exposure to understanding water problems in the field. At this stage, they simply try to understand water problems and challenges in an inter-disciplinary way. At this stage, they are not trying to find answers or solutions, but we simply give them an exposure visit to understand water issues in an inter-disciplinary way. This involves taking them to the field and seeing a problem, understanding which needs an inter-disciplinary perspective. They come back from the field and narrate their understanding of what they saw, and where the inter-disciplinary nature of problems can be seen to be located.

Topic 5: Positivist research design: (8hours)

This topic provides students an exposure to the different steps in research that is predominantly quantitative or positivist in orientation. Students need to understand the steps involved as well as approaches to data collection and analysis

Sub-topics: designing and framing hypothesis, hypothesis testing, reliability and validity, determining sample size, procedures for sampling (probability and non-probability sampling), some hands on training on SPSS (or other analytic software as suited to the specific needs of the programme/institute)

Reading:

Social Research Methods. Qualitative and Quantitative Approaches. W. Lawrence Neuman. Third Edition. 1997. Chapter 10. Survey research & Chapter 13. Quantitative Research Design.

Additional optional reading may be provided by the respective course instructors to deepen an understanding of specific methods or tools.

Topic 6: Case study and Grounded Theory as inter-disciplinary field research (1 hour) methodologies

Field research often involves a detailed investigation of one particular setting that constitutes a case. Students are made to understand what constitutes a case study and how to generalize from it. Thus they are introduced to the case study method as well as to the premise of grounded theory.

Sub-topics: case study method, defining what constitutes a case, analytic vs statistical generalization, grounded theory

Suggested exercise: Encourage students to think about the context of their research. What would constitute a case? A village? Country? A canal? A specific dam? What kind of generalizations could they seek to draw from their research?

Readings. Strauss, A., & Corbin, J. (1994). Grounded theory methodology. *Handbook of qualitative research*, 17, 273-85.

Yin, R. K. (2009). Case study research: Design and methods (applied social research methods). *London and Singapore: Sage*.

Suggested supplementary readings:

Basics of qualitative research: Grounded theory procedures and techniques. Strauss, Anselm; Corbin, Juliet M. (1990). Thousand Oaks, CA, US: Sage Publications, Inc.

Grounded theory in practice. A Strauss, JM Corbin (1997). Sage Publications.

Constructing grounded theory. 2nd Edition. K Charmaz. (2013). London: Sage Publications.

Topic 7: Appreciative Enquiry and Participatory Rural Appraisal as methodologies (3 hours)

Students are made to understand appreciative enquiry as methodology. They understand the genesis of Participatory Rural Appraisal and its rationale and underlying principles as deviation from those of structured surveys. They are then introduced to PRA methods (tools). It is important to understand how not to do a PRA as much as how to do a PRA. This block concludes with some applications and limitations of PRAs.

sub-topics: Appreciative Enquiry, Genesis and philosophy of PRA, Principles of PRA , PRA tools (trend lines, time lines, wealth ranking, seasonality analyses, venn diagram, time budgets, resource mapping, transect walk), Applications of PRA, Limitations of PRA; values of participatory research in water development and management

Suggested exercise. Split the class into two groups for a mock PRA and take them outdoors, for instance, to a play ground. One group represents the villager community and the other a team of researchers. Ask the latter to explore the village setting. They can be imaginative with chart papers, markers, chalk, pebbles, stones and grains or sticks.

After the exercise ask both groups to report on the experiences. What was new to the researcher team? How did they apply the principles of PRA? How did the team representing the villagers community feel to be intruded? What would the research team do differently next time?

Readings. Cooperrider, D. L., & Whitney, D. (2001). A positive revolution in change: Appreciative inquiry. *Public administration and public policy*, 87, 611-630.

Chambers, R. (1994). Participatory rural appraisal (PRA): Analysis of experience. *World development*, 22(9), 1253-1268.

Suggested Supplementary Readings

Chambers, R. (1994). The origins and practice of participatory rural appraisal. *World development*, 22(7), 953-969.

Chambers, Robert. "PRA, PLA and pluralism: Practice and theory." *The Sage handbook of action research. Participative inquiry and practice 2* (2008): 297-318.

Topic 8: Ethnography and Qualitative Research Design (3 hours)

Field research often entails a prolonged period of detailed observation of the subjects of the study. This module will expose participants to ethnography as a research methodology, its basic principles; a discussion of when ethnography is suited; the tools and methods used in ethnographic research and how the data thus collected is analysed, written and presented. This component of the course is combined with other approaches in field research used often in conjunction with, or independently, of ethnography.

Sub-topics: What is ethnography? When is ethnography suited? principles of ethnography; sampling in ethnography (or qualitative research more generally); socialization; naturalism; dealing with gate-keepers; climbing the access ladder; deciding when to exit; taking field notes; writing memos; analysing qualitative data and writing research reports based on ethnography; key informant interviews; focus group discussions; semi-structured interviews

Suggested exercise. Simulate some semi structured interviewing in class and explore how field jottings are made.

Readings. Fetterman, D. M. (2009). *Ethnography: Step-by-step* (Vol. 17). Sage Publications.

Garfinkel, Harold. "The origins of the term 'ethnomethodology'." *Ethnomethodology* 15 (1974): 18.

Topic 9: Developing and executing a research proposal, class presentation and feedback (24 hours)

This segment of the course focuses on actual experience in developing a research proposal. Using the skills taught above, students are encouraged to develop a research question or hypothesis and develop a methodology, specifying the methods that they consider relevant and appropriate to their analysis to further analyze the issues or problems identified in module 4. This is then presented in class and feedback is sought.

Students now approach the field with a specific research design developed based on the class learning to further investigate the problems they have identified on the basis of module 4. This is an application of the learning of research methods to the problems listed in module 4 above. They then come back to the class and make presentations, on which they are evaluated.