While it has not always been the case, rangelands are being increasingly recognized for their conservation potential. Conservation benefits include protecting open space from fragmentation, safeguarding ecosystem services, and preserving an American rural heritage. Given that 30% of the US is rangeland and much of this is in the West and IWJV region, this is increasingly important. However, in order to sustain the natural resources on these lands, **it is critical to understand the social components of rangelands to be able to promote a win-win for ranchers and conservation.**

Which brings us to the question that is often overlooked as a component of conservation delivery, especially in regard to flood irrigation: “Why do ranchers do what they do?” Decisions can involve a variety of factors. There could be natural interests such as benefits to wildlife and the landscape. There could also be economic interests such as maintaining a financially viable operation. And there could also be social components such as the importance of ranching as a way of life.

While research has explored ecological implications of flood irrigation (the primary practice that sustains working wet meadows in the Intermountain West) there is really a lack of social science related to it. Understanding the relationship between flood irrigation, agricultural production, migratory bird habitat, and the economic and social drivers of associated landowner decisions can help more effectively engage landowners.

Through investments from NRCS Oregon State Office and the U.S. Fish & Wildlife Service's Mountain-Prairie Region, the Intermountain West Joint Venture (IWJV) contracted with a research team who established this conceptual framework for a research project to explore what factors agricultural landowners consider when deciding to continue or discontinue flood irrigation and how these factors interrelate. This framework includes all benefits garnered by humans and the ecosystem that are cogenerated by the people and the environment. It consists of 7 types of capital – financial, built, cultural, human, social, political, and natural capital.

<u>As defined by Emery and Flora:</u>
Financial: The financial resources available to invest in community capacity building.
Built: The infrastructure that supports the community.
Cultural: The way people know the world and how to act within it and includes the dynamics of who we know and feel comfortable with, what heritages are valued.
Human: The skills and abilities of people, as well as the ability to access outside resources and bodies of knowledge.
Social: The connections between people and organizations or the social glue to make things happen.
Political: Access to power and power brokers such as local office members of congress, officials, etc.
Natural: Those assets that abide in a location, including resources, amenities and natural beauty.

ENABLERS AND CONSTRAINTS

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Our research looked at enablers and constraints related to each type of capital as a kind of push and pull. An enabling factor is one that promotes/supports flood irrigation as perceived by ranchers, whereas a constraining factor is something that may inhibit, or is seen as a negative, of flood irrigation as perceived by ranchers. Our research also looked at how these enabling and constraining factors of flood irrigation interrelated.

RESEARCH QUESTIONS

- What components of community capital enable or constrain flood irrigation by ranchers?
- How do these enabling and constraining factors of flood irrigation interrelate?

To examine this we used a qualitative research methodology, conducting two landowner-listing workshops in the Intermountain West. The workshops are based on a model developed by Partners for Conservation where the focus is on hearing from landowners through landowner-led panels and discussions facilitated by a recognized and trusted local professional, and creating a safe environment for the landowners to talk candidly about their experiences with flood irrigation, their decision points, and experiences with conservation programs and policies, rather than the typical conservation meeting where a professional leads the presentations. The workshops were audio-recorded, transcribed, and coded to reveal how the capital types are enablers or constraints to flood irrigation.

(Note: In the OR workshop, we had 12 ranchers and 7 professionals. In the WY workshop, there was 19 ranchers and 20 professionals; we didn't quite meet the goal of more landowners in the room, given all the interest of professionals in that area.)

Our original conceptual framework had initially separated the different types of capital and had us look at each independently, but what we learned through the landowner-led workshops is that the different types of capital are **interdependent.** The ecological and social elements are inseparable as relates to ranching overall and irrigation practices specifically.

What we found is that the ranching lifestyle and overall viability of the operation is really important to ranchers, and they consider complex, multi-faceted factors across the social-ecological system when approaching irrigation decisions that ultimately sustain working wet meadow systems. So, the discussion is broader than we originally thought and there is a focus on **ranching viability** overall. This is where the threat is perceived to be to their entire operation. Additionally, it is key to recognize that the considerations are wide and are <u>not</u> just about finances, as often expected or assumed.

These research findings were co-produced by the research team, IWJV staff, and key partners with an eye toward developing practical recommendations that could be used by conservation professionals to ensure successful, sustainable engagement of landowners and maintenance of working wet meadows.

1) COMMUNICATIONS

- TELL THE RANCHER STORY
- SHARE RESEARCH RESULTS TO AGENCIES AND PROFESSIONALS

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There are four categories of recommendations that came out of this research project. The first is COMMUNICATIONS.

The ranchers expressed a need for communicating the value of ranches and flood irrigation to various audiences, particularly the surrounding communities, urban areas, and downstream users, as well as environmental organizations.

Related to this, we heard a fair amount of concern that water decision-makers (policy makers) didn't value water allocation to flood irrigation, as much of the general public considers it an inefficient use of water. Communication with local water districts and decision-makers could help address these concerns by explaining the role of flood irrigation in these communities, both socially and ecologically.

Also it was recommended that the results of this study be widely shared, and really focus on messaging about the social-ecological complexity of ranch management, particularly with agencies and conservation professionals to help them more fully understand the complexity of ranching decisions and that rancher considerations extend beyond simply finances. Another important message relates to the potential cascading effects on local communities if ranching operations are lost, with the role they play in sustaining local social and cultural networks. There's a strong focus on the social and cultural piece, as it's often overlooked by the conservation community. We also recommend stepping back from framing decisions as a dichotomy of sprinkler versus flood irrigation as that's not necessarily how ranchers in these landscapes thought of the issue. Instead, communications could focus on the role of irrigation broadly in sustaining ranches through the complex set of capitals.

2) CONSERVATION DELIVERY

- EMPHASIZE INCREASED FLEXIBILITY IN PROGRAM DESIGN AT A PLACE-BASED LEVEL
- EMPHASIZE PARTNER POSITIONS TO CONNECT WITH RANCHERS IN THEIR PLACE
- FOSTER DEVELOPMENT OF THE NEXT GENERATION IN AGRICULTURE

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The second category of recommendations deals with CONSERVATION DELIVERY. In looking at conservation delivery, overall, we suggest more consideration of the 7 different types of enablers and constraints into efforts, particularly those traditionally less incorporated into conservation design such as human, social, and cultural capital when considering new methods of conservation delivery. Also, considering the operation-specific nature of many rancher decisions may be useful with this push for stronger incorporation of the social-ecological context and complexity in conservation delivery.

Partner biologist positions can contribute to conservation delivery that fosters sustainability of ranching operations through locally-grounded principles. That is, given the place-based nature of so many ranching decisions, it is critical that those on the ground delivering conservation programs are versed in local, place-specific constraints and considerations. The value of partner biologists is extended when they are supported by management in gaining the skills and allocated the time required to build relationships with ranchers.

Another big theme we heard relates to human capital with supporting ranching sustainability over time and these rural communities overall. Succession planning, or technical assistance on the topic, development of future farmers' programs, connecting young or new farmers interested in finding a place to ranch with ranchers who may not have family interested in taking over their operations, can all contribute to long-term ranching sustainability.

(One program that is currently in place to foster this development of the next generation of agricultural land stewards is the Rangeland Conservation Internship Program through the Wyoming Stock Growers Association and the Nature Conservancy. Through paid internships undergraduate and graduate students gain hands-on experience with rangeland conservation principles on The Nature Conservancy's ranches across the state. Programs like this could be useful for developing skillsets and training that would provide the needed skilled labor and facilitate entry into flood irrigation.)

3) CONSERVATION PROGRAMS & FUNDING

- OFFER INCENTIVES FOR INFRASTRUCTURE MAINTENANCE
- EXPLORE OPTIONS FOR PAYMENT FOR ECOSYSTEM SERVICES

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The third category of recommendations deals with CONSERVATION PROGRAMS & FUNDING. Here, it's recommended that we also consider built capital constraints when prioritizing conservation delivery strategies. Financial and time demands of maintaining old and dilapidated infrastructure were primary constraints to flood irrigation. Several ranchers were frustrated that funding is available for new infrastructure, but not for the upkeep and maintenance of old infrastructure. So there may be opportunities to tap into this interest for cost-share programs or other opportunities for maintenance and upkeep of old infrastructure.

Related to social and political capital constraints, ranchers in both workshops expressed frustration that the benefits of flood irrigation for the ecosystem were not properly recognized which led into a discussion of "payment for ecosystem services" related to flood irrigation. These are incentives for landowners in exchange for providing some sort of ecological service and have been applied around the world in diverse contexts. Landowners in some landscapes are interested in pursuing payment for ecosystem services with their local policy-makers.

The final category of recommendations relates to PARTNERSHIPS. In both regions where we held workshops, collaboration among diverse stakeholders is already occurring, and many ranchers find this cooperation critical to success. They have positive relationships with agency representatives in local offices and find these relationships important for both conservation success and ranching sustainability. Support for these efforts and helping as needed to ensure the success of these partnerships includes finding ways to support landowners and partners in key aspects of trust building, partnership development, and sustaining collaborative efforts.

Ranchers expressed a great deal of concern related to state-level water rights and policy. For instance, ranchers were frustrated with the one-size-fits-all approach of water regulations that may not fit with the place-based needs of their operation and fields. Thus, there may be opportunities to consider a role in engaging in state-level policy discussions and strengthen partnerships with state legislators and decision-makers. It is important for all of us to communicate technical information regarding the environmental values of flood-irrigation and ranching land-use practices to these decision-makers, particularly water management agencies. This could provide an additional platform for the ranching community to engage in complex discussions regarding current and future water-use and management. Additionally, it could be useful to find partners who work at the local or state level and provide them with tools to be involved in policy discussions and communicate that rancher and landowner input has to happen on the front-end of decision making as opposed to on the back end or not at all.

Also, strengthening partnerships with diverse local partners can help promote capacity-building surrounding the ranching community. Partners who play a strong role in the local communities but do not tend to be engaged at the state or regional level within the Joint Venture are frequently the local soil and water conservation districts, irrigation districts, watershed councils, and university extension programs. These entities tend to be respected and trusted by producers and often play a key role in acting as a champion for agricultural producers and leveraging resources and pushing for necessary local programs. These may be partners to further engage to help support emerging initiatives.

The research paper was published in *Rangeland Ecology & Management* on January 13, 2020.

IWJV's website contains a link to the journal article, a distilled version of the research (called *Intermountain Insights* – cover image featured here), a webinar recording, and the summary document of the recommendations that were developed from the research.

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