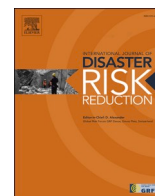


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Assumptions and understanding of success in home buyout programs

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ABSTRACT

In the US, the role and importance of voluntary buyout and property acquisition programs (buyouts) as a policy tool to relocate property owners out of flood risk riverine and coastal environments has increased since the 1990s, but how federal and other agencies frame success remains less understood. This review paper uses the case of an early implementation of a buyout program that encompassed a portion of Valmeyer to illustrate how success has been framed, and why. Analysis shows definitions of success by different actors emphasized acquisition of properties, construction of new residential and business areas including the incorporation of sustainable building technologies, as well as future avoidance of disaster costs. These definitions, however, become problematic when considering what is left out or overlooked, including socio-economic elements that may be relevant for recovery. Success is framed narrowly, focusing far more on the removal of families from floodplains, and less on eventual outcomes for those families. This may undermine critical community voices and effective forms of recovery. There are important questions that remain unanswered including questions about the lost sense of community, disruptions to social networks, and how buyouts implicate land-use dynamics. We draw attention to crucial, but overlooked elements in the construction of success including potential harms that may flow from assumptions of success and the role and importance of co-production of knowledge and social values in managed retreat.

1. Introduction

The increasing frequency and intensity of storms and flooding affecting urban, coastal, and riverine communities and associated losses have led to growing reliance upon voluntary buyout programs and property acquisition (buyouts) as both pre- and post-disaster mitigation measures [1–7]. Floods accounted for the largest number of lives lost and most properties damaged compared to any other natural hazard during the 20th Century [8]; [84]). Sea level rise and increased extreme precipitation events because of climate change will continue to place millions of people and billions of dollars of infrastructure at risk [9,10]. A 2013 Federal Emergency Management Agency (FEMA) report shows coastal communities mainly along the eastern seaboard are expected to witness an average 55% increase

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in flood discharge, floodplain depth, and the size of the mapped floodplain by 2100. By that same year, the report projects up to a 45% increase in the nation-wide average of these parameters due to climate change and demographic growth – the latter accounting for approximately 30% of the increase. Property acquisition has risen in popularity as a hazard mitigation strategy following the Great Midwest Floods of 1993 (Match et al., 2019). FEMA declared 2582 flood events between 1996 and 2019, spending over \$2 billion in flood buyouts since 1993 to buy 36,707 properties nation-wide [11]. FEMA has since 2000 spent over \$843 million towards voluntary property acquisition programs in more than 1100 communities across 44 states in the US [12,13].

There are indications that the relocation of people and property will become unavoidable in many coastal areas (USGCRP 2018) and that expanding buyout programs would be more cost-effective than elevating houses or flood-proofing basements [14]. FEMA has long argued natural hazard mitigation is a cost-effective means of reducing the cost of disaster recovery – saving an average of \$6 in future disaster-related costs [15]. FEMA's national Benefit-Cost Analysis (BCA) shows that while society could benefit economically from hazard mitigation programs, BCA itself may play only a small part in a well-thought-out relocation decision in relation to future risks [16–18]. This raises the need for analysis that can shed light on buyout decision-making, and what (or does not) counts as success.

Although buyouts are consistently framed as important hazard mitigation policy tools, significant uncertainty remains about whether such programs meet their objective of reducing vulnerability, and the extent to which past 'successes' have protected people and diverse publics from harm. Such interrogation is particularly timely given the severity of repetitive disasters and rising costs of protecting communities in floodplains, which makes investing in hazard mitigation necessary and attractive [11,19]. Whereas abundant academic literature on buyouts now exist that can help to draw an evidence-based conclusion about their viability as hazard mitigation and disaster recovery tool, questions about success in these programs remain peripheral to mainstream debates [20–22]. Establishing how agencies define their 'success' as a hazard mitigation strategy is important for researchers and the general public to understand in order to better manage flood risks.

This paper explores how success has been framed in previous buyout programs, and why success has been framed that way, using the test case of an early implementation of a buyout program that encompassed a portion of the village of Valmeyer, Illinois (USA). Can obvious ingredients for relocation, such as federal and state dollars, local buy-in, and alternative land close by, be the only pre-requisites for recreating a community including preserving some semblance of its original character and history? How do current assumptions and understanding of successful relocation shape views on wider production and/or reproduction of inequalities? Are there limitations to relying on past 'success' as determinants of future success? If yes, what are they? We draw on these questions to explore a single buyout program and how success has been framed, and implications on local level outcomes. This paper is organized as follows. Section 2 background on buyouts as disaster mitigation tool, including a summary of the various federal programs utilized to fund buyouts. Section 3 describes the methodology, providing a summary of data sources as well as the methods utilized. We present the results of our analysis in Section 4 and wrap up with a conclusion in Section 5.

2. Buyouts as a disaster mitigation tool

2.1. Buyouts

We find inconsistencies in the way the concept buyout has been defined and applied in existing research and program guidance. FEMA's Hazard Mitigation Guidance (2015) uses the terms buyout and acquisition interchangeably including in its Property Acquisition Handbook for Local Communities (1988). The US Department of Housing and Urban Development's (HUD) Buyout Program Guidance and Best Practices (2019) have used the term buyout to show programs that target areas for acquisition/purchase of property (see [82]) to reduce future disaster impacts and ultimately permeate open space. Except in limited circumstances, such as flood structures and parks, buyouts discourage or prohibit rebuilding or redevelopment, and properties subject to buyouts are not eligible for future federal disaster aid [23]; [79]). Both acquisitions and buyout programs are conducted frequently as voluntary sales from homeowners; however, in rare (to date) cases, they can still be deployed using eminent domain ([82] [13,24,25]; GTCC 2020). Homeowners may choose whether to accept a purchase offer while state and local officials may not use or threaten to use their eminent domain or condemnation powers. Meanwhile, many of the same hazard programs that fund acquisitions also fund elevations, and jurisdictions often choose one over the other or a combination of both. Buyouts vary in many ways: the type of hazard that necessitates it, the primary funding source (federal or non-federal), and the number of properties purchased. Timing, state involvement, and what can be done with the land afterwards including the use of financial incentives and disincentives can contribute to variations [26]; [82]; [27]. Grant programs can vary across implementing agencies, and application processes, also varying across scale, with some proceeding on a parcel-by-parcel basis (piecemeal) or more comprehensively in a defined area (neighborhood) (holistic) (GTCC 2020; de Vries 2012). While there are communities that have relocated, and communities that are described in the literature as having done so successfully [1], several factors still complicate the effectiveness of buyouts as hazard mitigation strategies and the success of these buyouts can be called into question.

2.2. Programs and funding agencies

2.2.1. Background and legislation

Federal engagement with flooding dates back to the 19th Century [28,29]; 2017; [30]. Until the 1990s, federally backed buyouts related to flooding were primarily restricted to rural areas (e.g., North Carolina and communities along the Mississippi River). Since then, the use of buyouts has significantly expanded shaped by legislation promoting hazard mitigation plans [31,32]. The Federal Disaster Mitigation Act of 2000 required state and local governments to develop hazard mitigation plans to become eligible for pre-and post-disaster mitigation funds, such as the Pre-Disaster Mitigation (PDM) program (now replaced by FEMA's Building Resilient Infrastructure and Communities (BRIC program) and HMGP[33]. Several other agencies have utilized buyouts and acquisitions; for

instance, the US Army Corps of Engineers and HUD [34,35]. Hazard mitigation assistance has been shaped by the Robert T. Stafford Act of 1988, the Disaster Mitigation Act of 2000, and the Disaster Recovery Reform Act of 2018. The Stafford Act consolidated several federal disaster recovery programs into one agency while adding a dedicated source of post-disaster hazard mitigation funding, the HMGP. FEMA provides pre- and post-disaster hazard mitigation grants (hazard mitigation assistance, HMA) in support of a larger risk reduction strategy employed by communities including actions intended to adapt to climate change disasters (Section 2.2.2).

Despite acknowledging the importance of pre-disaster mitigation, federal programs have primarily funded buyouts of individual high-risk properties in response to specific events. This points to the relative amount of funding made available after a disaster as opposed to annual appropriations [36,37].² Under the block grant model, the majority of disaster assistance is administered by states with local jurisdictions acting as sub-recipients. Post-buyout property ownership varies across federal and non-federal entities; however, properties acquired through buyouts generally serve hazard mitigation and passive recreation purposes [13,19].

After a Presidential disaster declaration, a local government or a local flood control district can pursue a federally funded buyout via HMGP, or absent a declared disaster pursue a pre-disaster grant. Regardless, the grant will require a Benefit-Cost Analysis (BCA), which determines future benefits of the proposed buyout project and compares them with its immediate costs to generate a benefit-cost ratio.³ Thus, to be eligible for HMGP funds, anticipated benefits (e.g., reduction in future flood damages) of a proposed mitigation project must exceed the total project cost (FEMA 1997).⁴ Furthermore, when there are limited mitigation dollars, the BCA can be a key determining factor in which projects get awarded, with preference given to those with a higher BCA. However, since 2013 FEMA has expanded the BCA toolkit to incorporate environmental benefits making it easier to elevate BCA results for some buyouts (see Ref. [38]). Local flood control experts may make judgements about where buyouts should happen, at times driven by risk or by political consideration in that actual allocation of funds is impacted by property values, which are considered objective and market-based [13, 29].

2.2.2. Funding programs

While acquisition and buyout programs can be funded entirely through state or local funds, most programs are federally funded, primarily via the programs described below.

a Hazard Mitigation Grant Program (HMGP)

FEMA's HMGP formula-based funds are distributed to states and are constrained to 15% of the total Stafford Act Assistance provided to an affected area. Once approved, a third party must then provide a 25% match of the total cost of the project (FEMA 2015).⁵ State or local governments typically fulfil matching requirements by including participating homeowners [26,39,40], while states exercising general latitude on how funds will be allocated (IoM 2015). The National Flood Insurance Program (NFIP) is another key mitigation program that provides relief after a disaster and allows property owners who purchase insurance through this program to submit claims for flood-damaged properties [41,42]; IoM 2015).

b Building Resilient Infrastructure and Communities (BRIC)

BRIC is a recent FEMA pre-disaster hazard mitigation program that replaced the PDM program. The program pulls about \$300 – \$500 million per year from FEMA's Disaster Relief Fund [43]. Fiscal year 2020 shows a continuing trend of oversubscription to HMA grant programs (BRIC and FMA) at \$3.99 billion against an available \$700 million (FEMA 2021).

c HUD Community Development Block Grant Disaster Relief (CDBG-DR)

The HUD's Community Development Block Grant-Disaster Relief (CDBG-DR) program can be used to acquire damaged properties after a congressional appropriation, in some cases combining federal and state funds [26]; [82]). Congressional appropriations under HUD aim to address significant unmet funding needs from other funding sources (e.g., HMGP), and for long-term recovery especially in low-income communities. CDBG-DR funds a wide range of projects that benefit low- and moderate-income persons, prevent or eliminate slums or blight, or address immediate threats to the health of the community where other financial resources are unavailable. These funds may be used to match federal resources and may be used in combination with other grants and cannot duplicate funding made available from other sources [43]. Thus, CDBG-DR funds have often been used to fund buyouts directly or meet the 25% match required by HMA funding, making them particularly useful to, and sought by, communities who cannot meet the matching requirements of other grants.

d Other Funding Mechanisms

Where there is no Presidential disaster declaration, states or local governments can deploy non-federal funding opportunities to leverage alternative pools of disaster recovery resources (e.g., private-sector investments; charity from non-profit and philanthropic

² Federally deployed resources in response to flooding include grants, loans, and technical assistance, which can be used for debris removal, post-disaster recovery planning, infrastructure repairs, hazard mitigation, and financial support to individuals and families. Services include crisis counselling, case management, and economic development (IoM 2015).

³ A ratio greater than 1.0 shows a project is cost-effective and that the financial benefit to the federal government exceeds immediate costs to taxpayers (FEMA 1997).

⁴ Usually, BCAs are aggregated for large-scale projects allowing some higher value homes to offset others (see Rose et al., 2007 on Benefit-Cost Analysis of FEMA hazard mitigation grants).

⁵ In some cases, CDBG-DR funds have been utilized for this purpose.

organizations; and state insurance, cash reserves, and disaster budgets), but limited evidence exists to date about whether these efforts can complete buyouts more effectively than federal initiatives [43,44]. A recent study by Ref. [43] reveals several local level financing mechanisms (e.g., stormwater utility fees, local option sales tax, and municipal bonds) playing a pivotal role in driving buyouts and acquisitions (see Ref. [45]).

2.3. Benefits and challenges of buyouts as policy solution

Hazard mitigation goes beyond buyouts to include land use, codes, home elevations, and other risk reduction strategies. Federal and state funding sources can reduce the economic recovery burden on affected communities, as well as reduce NFIP's future cost of emergency response and disaster recovery efforts (FEMA 2017).⁶ Rose et al. (2007) empirically showed that the societal benefits of buyout grants made between 1993 and 2003 were four times greater than associated costs. Thus, buyouts are arguably the ultimate solution to repetitive flooding because they permanently remove vulnerable homes and properties from disaster-prone areas. By so doing, buyouts reduce exposure to disasters; disaster response costs and flood insurance payments; and future flood levels through the restoration of natural buffers. They eliminate maintenance and repair costs of flood control structures and provide environmental/recreational benefits through open spaces, eventually increasing property values of surrounding homes [26]. In some cases, homeowners can extract equity from their current home through pre-disaster fair market offers on their property.

However, buyouts continue to produce divergent outcomes for individuals both within and across communities, making success difficult to measure. Federal programs have been criticized as being time-consuming (averaging five years) and insufficient, lacking transparency, and being reactive [44]. Buyouts have been affected by bureaucratic complexities (e.g., varying funding agencies, long and complicated application processes), leading to delays in providing assistance and lack of flexibility in property acquisition. For instance, the [81] reports that of the 30,000 homes across the country that flooded multiple times between 1978 and 2015, fewer than 9% were bought out, with the Great Midwest Floods of 1993 registering the greatest number of bought-out properties (more than 8000 in total) (see also [5]; [78]; [11]).

There are reports highlighting inequities in resource distribution, how buyouts are allocated and lack of clarity in decision-making regarding where to acquire properties. Some of this relates to race and marginalization, which suggests low-income homeowners may not always adequately be compensated [29]. Meanwhile, decision-making based upon a BCA about where to invest adaptation resources has been cited as producing mismatches between benefits and costs that sometimes disadvantage many rural communities [46]. Some of these relate to income consequences of relocation after buyouts more broadly, with women facing even greater decreases in wages and salaries (Hoang and Noy 2021).

There are also concerns about coercion based on the policy-intended practice of informed consent and the extent to which participants make informed decisions voluntarily [3]. Some concerns related to human preferences to rebuild, and related denials of assistance, which affect overall recovery (Elliot et al., 2020). Given the powerful social and environment force that race has long exerted in US Cities, buyout have often been associated with racialized patterns and unequal retreat (Loughran and Elliot 2022). Meanwhile, social impacts of buyouts can include disruption of community relationships and psychological anxiety that affect disaster recovery [47]. FEMA's efforts, critics argue, have subsidized residential development in hazardous, flood-prone areas in ways that are not only dangerous to residents, but fiscally unsustainable for taxpayers (de Vries and Fraser 2021). Meanwhile, demographic changes because of a buyout tend to reduce local tax economies, which can lead to a further lack of resources to support buyouts themselves. As Koslov (2016) notes, people are more likely to be displaced but less likely to fairly compensated, leaving them unable to rebuild their lives somewhere safer. She adds there is little awareness of retreat as a viable option not because there is no public desire for retreat but because Government support has been lacking and Government policies are inadequate to accomplish it. Overall, the buyout and relocation case of Valmeyer continue to be presented as progressive, empowering and a remarkable achievement, even as it entailed some level of loss (Koslov 2016).

3. Methods

This review paper is qualitative in nature, and an interrogation of a collection of texts, drawing from similar methodological approaches (see Ref. [43]). In order to understand assumptions of success in home buyout program, we purposively selected a frequently cited early case of successful buyout and relocation program, and conducted systematic review of literature around the specific case of Valmeyer. The purpose of the review was to determine how and in what ways buyouts and relocation are constructed as successful and what this means for broader understanding climate responses. Specifically, we sought to understand various processes through which repetitive flooding disasters translate into actual buyouts and relocation cases, and related assumptions of successes and/or failure. Over 30 years, the oft-cited Valmeyer project is still considered the poster child for wholesale community relocation as a tool for permanently mitigating flood risk (Pinter 2021). It remains one of the largest relocation projects in US history, based on the number of primary structured built in the 'New Town' compared to pre-flood structures removed from old town.

3.1. The test case of valmeyer and the great mid-west flood disaster

'Old Valmeyer' was a small farming village in Monroe County in the State of Illinois, located five miles east of the Mississippi River, and just south of St. Louis, Missouri. There are two incorporated communities in Monroe County: Valmeyer and Fults. Combined,

⁶ Generally, HMGP funds are limited to buyouts rather than acquisitions while CDBG funds may permit acquisition, but limit redevelopment; however, grantees may redevelop acquired property if it is not acquired through a buyout program and is purchased at the property's post-flood fair market value (see [82]).

Valmeyer, the village of Fults, and unincorporated Monroe County accounted for more than 36% of buyout allocations in the State of Illinois following the 1993 flood event. Since incorporation in 1909, Valmeyer experienced two flood events in the 1940s and in the 1970s. The US Army Corps of Engineers constructed a levee system along the entire western boundary of Monroe County in 1947, protecting approximately 60,000 acres of farmland including the village of Valmeyer. In the 1970s, the Valmeyer area was designated a floodplain zone, effectively discouraging the construction of new structures among residents.

The Mississippi River breached Valmeyer's levee system on August 1st, 1993, flooding the village three separate times. A total of 2500 people were displaced, with floods inundating 80,000 square kilometers along the Missouri and the Mississippi Rivers, destroying 10,000 homes. By FEMA standards 90% of the buildings in Valmeyer were substantially damaged [48]; see also Pinter 2021). In Illinois, 39 counties were declared federal and state disaster areas, and another five counties were declared state disaster areas, with damages varying between 5 and 16 billion US dollars [49–51].

FEMA described the Valmeyer relocation as a mitigation best practice and an example of a successful post-flood buyout [11]. The scale and speed with which the relocation took place has been used as an example of how local communities can leverage federal dollars to carry out relocation more quickly. Whereas average FEMA Hazard Mitigation Grant Program (HMGP) buyout projects average 5.7 years from the start of the associated disaster event to project closeout [5], a major portion of the flood-ravaged village of Valmeyer had been acquired and demolished within two years stretching from April 1994 to April 1996 (FEMA 2021).

3.2.2. Data sources

We reviewed and synthesized existing literature on the implementation of the Valmeyer home buyout program and acquisition of residential, commercial, and other properties to understand the different elements that shape the framings of success. We began by reviewing earlier efforts such as the US Army Corp of Engineering and their financing mechanisms around the country. Next, we used different search engines to identify relevant literature, evidence to buyout/relocations more broadly, and to the test case of Valmeyer – our focus. We used Google, Google Scholar and ProQuest. Key search terms included: floodplain buyout, floodplain acquisition, hazard mitigation plan, successful buyout, successful relocation, Valmeyer, 1993 Midwest disaster – adding geography and jurisdiction. Peer-reviewed and grey literature (e.g., project reports, congressional hearing reports) were searched for relevant descriptions of buyouts that followed the 1993 flood. We selected articles based on abstract reviews and reference lists, asking ‘what,’ ‘how,’ and ‘why’ questions compatible with case study analysis [52]. Combined, our searches yielded 88 files of which 25 were included based on references and citations. Other files were excluded based on their focus on physical aspects, further excluding those related to GIS mapping. Overall, the literature search comprised academic journal articles ($n = 33$). Academic literature helped to highlight inequalities, buyout distribution, social justice, bureaucratic discretion, community participation and decision-making. This included PhD, Masters, and undergraduate theses ($n = 3$). We included technical reports on the disaster, relocation, and the new townsite ($n = 7$). Literature included non-profit reports ($n = 25$), newspaper/media features on community experiences ($n = 6$), and documentaries ($n = 1$). We examined agency reports ($n = 19$), conference proceedings ($n = 2$), and other reports ($n = 17$). We also reached out to the Valmeyer, IL, library for more materials, adding email exchanges with Knobloch – the former Mayor.

Using NVivo, we identified frequently referred to elements in the relocation to form some nodes as thematic areas on which to cluster similar reports. As [53] did, programmatic design elements were analyzed looking for the motivation for relocation and related community decision-making processes and how these relate to wider descriptions of success. We analyzed primary funding source/s/agencies and application processes undertaken, issues encountered and, where possible, how they were resolved. This included examining the number of properties purchased (including tools for acquisition), who relocated, overall criteria for inclusion (e.g., homeowners) and exclusion (e.g., renters), and local agents driving relocation.

These reports including those written by direct participants, such as the former Mayor, provided details of experiences and interactions with community residents (see Ref. [54] in relation to Valmeyer, IL) – and provide a fittingly relevant basis for our analysis.

3.2. Limitations

This study design presents several limitations. The buyout and relocation cases in Valmeyer took places about three decades. However, despite some significant changes in the project application processes, the intellectual logics and overall procedures have remained unchanged, making this review analysis relevant. We are aware researchers' attitudes might have changed, alongside changes in trends across the three decades. However, by scanning diverse sets of literature, we make sure sources are double checked with current buyout situations. Reliance on documentary evidence can limit the understanding on actual realities and relocation processes. The landscape of buyouts in the US continues to evolve and new insights continue to emerge, and a growing awareness of climate change can alter the meaning of retreats. For instance, when Valmeyer moved to higher grounds, it was neither called a retreat nor understood as a response to climate change (Koslov 2016).

4. Analysis

4.1. Policy and legal basis for relocating ‘old valmeyer’

4.1.1. Decision to relocate ‘Old Valmeyer’

After the 1993 flood event, village officials argued, “*the magnitude of loss would prevent many residents from repairing or rebuilding their homes and businesses*” [54]. Six weeks after the flood, a survey by the Extension Office revealed about 60% of property owners wanted to leave, allowing officials to activate a buyout. Some opposed this plan, but little is known about that opposition. The decision to relocate followed a series of informal meetings to discuss relocation possibilities and taking the buyout (ibidi.). As Koslov (2016) reports, a series of community meetings made the preference for a community relocation plan. To Knobloch, “*we felt that the only way*

we could keep the town together, and continue to have a Valmeyer would be trying to relocate the town” [55].

The way the buyout was structured and advanced reflects how official expert knowledge was deployed to shape decisions. Given the short period for the Valmeyer buyout, it is unclear how information about the buyout and relocation was communicated and how satisfied people were. Early reports show that while property owners had an option to rebuild, residents were made aware that no future government funds could be deployed unless they elevated all new structures above the latest flood levels of 12–16 feet high (Bruce 1996). This can be expensive even where extra insurance pay-outs are given to cover the increased cost of compliance [12], and might lead to homeowners to feeling coerced to accept ‘voluntary’ buyouts due to financial constraints [3]; however, early accounts on Valmeyer reveal floodplain designation partly influenced the community decision to relocate [54,56].

While not much was available in the form of planning tools, relocation to the new site was seen by officials as the only option for ensuring the survival of Valmeyer. With declining demographic and economic trends, village officials were concerned “*there would not be a sufficient number of residents remaining in their homes to support the tax base necessary to provide village services*” fearing if offered property buyouts, “*property owners would disperse to other surrounding towns,*” spelling the end of the community [54]. Driven by the objective to preserve the community, in the 100 days following the flood, local officials mobilized over 100 residents to participate in seven 10-member local community planning committees that developed a preliminary relocation plan and town design. This feature is arguably the highlight of the community-led relocation in Valmeyer. The committees, however, exclusively focused on facilitating relocation as opposed to discussing community options and implications across different social groups. The village immediately signed a letter of intent to purchase a 500-acre farm tract out of the floodplain, but within one and one-half miles of the old village. It was large enough to accommodate all residential, commercial, and public areas. The price was \$6000/acre (\$14,800/hectare); totaling \$3 million and negotiations to obtain government funding to pay for it began [54].

4.1.2. Relocation site, title, and ownership

There are reports the nearby alternative land for relocation (nearly 400 feet higher than the original town) encouraged local participation in the buyout. Whereas the geological evaluation of the proposed new site by the Illinois State Geological Survey (ISGS) provided a favorable assessment for new construction; however, the presence of an underground limestone quarry owned by the Columbian Quarry Company nearby raised challenges for acquisition of the contiguous property. In response, the village took a loan to purchase the quarry [55,57].

While community agency in laying preconditions for a buyout has been frequently cited as effective, some residents described FEMA’s response as “*unsatisfactory*” and “*not quick enough,*” adding the agency somewhat placed emphasis on rental subsidies, mobile homes, rations, and sandbags as opposed to an actual community discussion about the relocation [55]. Disaster funds came wrapped in red tape. This contextualizes the role and importance of federal agencies in determining what was possible in Valmeyer and how it could be accomplished, which raised compliance issues for the community.

4.1.3. Funding the relocation

Early reports show a general positive political tone in the post-disaster recovery period with community leaders asserting: “*At the state level, the governor brought agencies together and set a tone for consensus building among agencies*” and “*at the federal level, President Bill Clinton did the same, getting FEMA as a point agency to coordinate*” disaster recovery [55]. In September 1993, the director of FEMA, James Lee Witt, emphasized: “*Acquisition, elevation, or relocation of flood-damaged structures would be a priority*” of HMGP funding during the recovery effort. Whilst the US Army Corps of Engineers Commander Lieutenant General Arthur Williams called on “*the President to pull together something,*” the HUD emphasized relocation of flood victims (Koenig 1993). HUD Secretary Henry Cisneros advised flood victims be spared from bureaucratic red tape, calling for enhanced: 1) Coordination of flood aid to victims by FEMA, and other organizations; and 2) Effective system for matching HUD’s resources with flood victims’ needs. Adding: “*If we over bureaucratize, the people who suffer are the people who must fill out 14 forms,*” Henry challenged HUD workers to reinvent their roles during the flood disaster. In reality, this techno-managerial approach permeated all relocation processes and seemed to have limited scope for true partnership in decision-making about what the Valmeyer community envisioned as an effective recovery.

FEMA provided appraisal and title services for buyout properties for each of the local governments. Funds for the buyout and demolition were managed by the local government office, handling contracting and oversight of those contracts that would eventually return all buyout properties to green space. Funding agencies pooled disaster funds from various sources and distributed them accordingly for residential and non-residential property buyouts. The major funding agency was FEM-HMGP (50%) with the Illinois Department of Commerce and Community Affairs, and the National Flood Insurance Program (NFIP) offering 25% respectively. At the time of relocation, the match for federal funds at 75% (\$38,641,858.5) was covered by the State of Illinois at 25% (\$12,880,619.5). While Dennis Knobloch (Mayor of Valmeyer 1989–1995) and other community leaders have been credited for mobilizing relocation resources in Valmeyer, FEMA coordinated an intensive search for funds on behalf of flood-ravaged states to serve as a non-federal match required for the agency’s mitigation funds, creating possibilities for approving 170 mitigation projects involving approximately 10,000 properties within three years (FEMA 1994). Key state agencies included the Illinois Emergency Management Agency (IEMA); the Illinois Principals Association (IPA); and the Economic Development Administration. The US Farmers Home Administration was also involved at the federal level.

4.1.4. Offering buyouts and questions of eligibility

Many residents in Valmeyer did not carry flood insurance and were ineligible for buyouts under the NFIP. Federal officials realized strict adherence to NFIP guidelines could exclude many uninsured properties, affecting the tax base necessary to provide village municipal services [51]. Possibilities for policy/bureaucratic discretion and flexibility by FEMA to alter eligibility for disaster resources and offer blanket monetary settlements to insured and uninsured properties made relocation even more attractive to villagers

[56]. With housing values already diminishing due to the Great Midwest Floods of 1993, FEMA's offers could neither pay off mortgages nor cover the price of a new home elsewhere. Insufficient funding led states to mix disaster programs, adding grants from HUD that required no local contribution [7]. However, the ability to secure a grant match for Valmeyer highlights not only a forceful attitude, but also tactics by agencies to influence buyout acceptance by property owners [3,58]. Through FEMA, the buyout program paid property owners a pre-flood market value for their flooded properties – a total of \$11.7 million for 334 lots of land (De Jon and Lehman 1995) (Table 1).

During relocation, the market value of the local property was determined, and flood-affected residents were charged 50% of that amount to purchase plots of land in the New Village. Applications for lots were opened to not only disaster-affected residents of 'Old Valmeyer' but outsiders who expressed a desire to join the 'New Valmeyer' community – the current population comprises 300 'outsiders' (2021) (Section 4.3.2).

4.2. Narratives of successful relocation

4.2.1. Evidence for successful relocation

Three broad literature sets show that sources of data for what is frequently cited as evidence of successful relocation were more likely to refer to other sources within its broader literature category (somewhat of internal referencing), but NGO and other sources were frequently cited (Fig. 1).

Across all files, Valmeyer is frequently associated with 'community,' 'disaster,' 'recovery,' as broader thematic areas (Fig. 2). Actual details of these thematic elements, and what transpired in between are generally missing in existing literature.

Meanwhile, NGO related sources were more likely to incorporate several broad socio-economic thematic areas about Valmeyer compared to government and academic sources, respectively. Furthermore, 47% of the reviewed literature sources frequently relied on Dennis Knobloch's account (Fig. 3), described as the "best assessment of residents' experiences during the buyout" (Backer et al., 2018).

In his paper, former Mayor Knobloch details his experiences with repetitive flooding, his role in negotiating federal dollars, and his work in mobilizing the community to consider the buyout [54]. However, actual management of the buyout, and what was otherwise lost in between remains less reported even in Knobloch's account. Thus, broader descriptions of success in Valmeyer may be foisted on narrow if not incomplete accounts about what transpired, such as perceptions of how local people were made aware of the buyout and decision-making process. This includes how buyouts affected the sense of community in 'New Valmeyer.'

There is a much more complex picture when one considers wider qualitative experiences in Valmeyer beyond Knobloch's account. To understand these descriptions, we drew thirteen broad themes based on existing literature and collapsed to eleven, addressing potential overlaps. Analysis shows descriptions of Valmeyer emphasize utilization of federal funds ($n = 21$), relocation out of floodplains to higher grounds ($n = 19$), and construction of the new site ($n = 14$). Of the reviewed files, 67% relied on secondary data for descriptions of Valmeyer compared to 33% who drew from primary and mixed data sources – the latter more likely to integrate community-wide dynamics, such as sense of community, experiences, and decision making, than the former, *albeit* at a limited scale (Fig. 4).

4.2.2. Features of successful relocation

a. Successful Buyout Utilization: Acquisition of Residential and Non-residential Properties

Frequently cited narratives of successful relocation in Valmeyer included the acquisition of 302 residential properties, 29 businesses, and three churches. Specifically, FEMA HMGP funds coupled with funds from the Illinois Department of Commerce and Community Affairs and the Economic Development Administration allowed acquisition of 242 properties. Additionally, NFIP buyout funds allowed acquisition of 92 additional properties⁷ [59]; FEMA 2011). A total of \$44 million HMGP funds were available for nine affected states, but Congress provided two supplementary appropriations under HUD-CDBG: \$200 million in 1993 and \$250 million in 1994.⁸ Twenty-six occupied pre-disaster residences remaining in 'Old Valmeyer' opted to rebuild (see Pinter and Rees 2021 for an inventory of structures in Valmeyer, IL, based on pre-relocation data and field survey). The need to maintain the integrity of social and cultural institutions at the core of Old Valmeyer's identity drove acceptance of buyouts [54]. This focus, however, meant that perceptions of buyouts would differ from views on community relocation.

b. Relocating to a Nearby Bluff and Sustainable Technologies

The relocation of Valmeyer moved not only residential structures, but whole systems of infrastructure including roads, social institutions, and sewer lines. Existing literature points to the construction of new residential areas, commercial and industrial districts, school buildings, churches, and public offices on a new site as some of the successful features of the relocation [54]. Through the Council of Sustainable Development, the Department of Energy (DOE) Office of Energy Efficiency and Renewable Energy incorporated sustainable technologies into the design and construction of 'New Valmeyer' [48]. Technologies included burying pipes deep in the ground; passive solar design; ground-source geothermal heat pumps; and energy-efficient home construction with better insulation, low-flow showerheads, water-conserving toilets, and super-insulated, energy efficient, low E-windows. There are different ways risks

⁷ Prior to 1994, the NFIP was authorized under section 1362 of the National Flood Insurance Act of 1968 to purchase repeatedly flooded properties and transfer that land to the community. Section 1362 was repealed in 1994 and Section 1366 authorizing Flood Mitigation Assistance was added [59].

⁸ US Representative Harold Volmer of Missouri and Senator Tom Harkin of Iowa sponsored amendments to the Stafford Act increasing the amount of HMGP funds for nine states almost fourfold. This resulted in an amendment to the formula for calculating mitigation funds limiting them to 15% of Stafford Act grants. Overall, \$152.3 million was available through HMGP. Considering the 75/25 cost share, another \$50.7 million was to be spent by state and local government.

Table 1
Overview of buyout funding structure in Monroe County (various sources).

County/Village	Parcels Purchased	% of State Total	Buyout (\$)
Unincorporated Monroe County	139	11.89%	\$6,128,055
Village of Fults	21	1.39%	\$714,000
Village of Valmeyer	334	22.83%	\$11,763,172
Total	494	36.11%	\$18,605,227

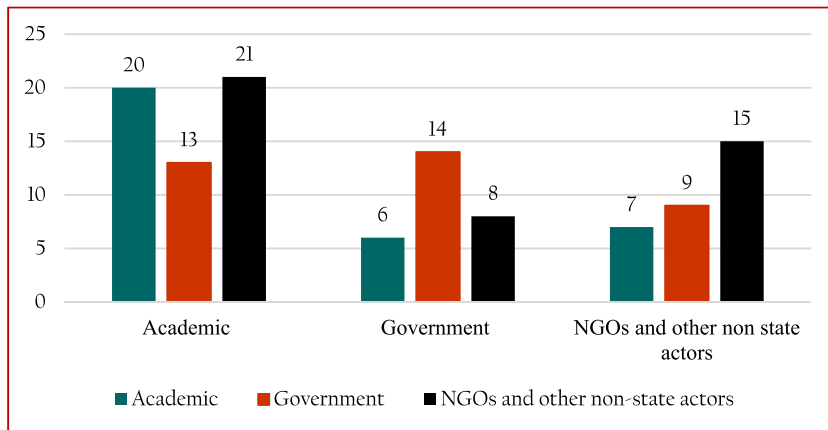


Fig. 1. Broader literature groups and sources of information.

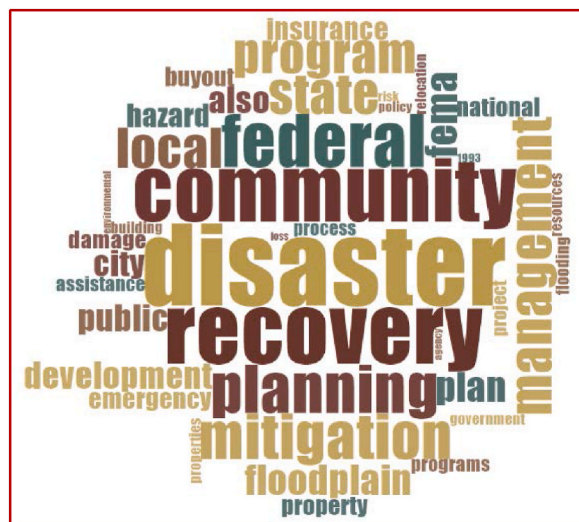


Fig. 2. Frequency themes and associations with Valmeyer (QRS NVivo Project).

are taken by households, but whether the green infrastructure was a priority for the community amidst flood recovery is unclear. Unclear also is how design choices affected income groups and implications for equity.

c. Restoring Natural Functions of the Floodplain and New Business Opportunities

In Valmeyer, the bought-out area property was given back to the community as open space and has been rented out to local farmers for farming at a fee, lowering the cost of maintenance. From the perspective of the former mayor, Knobloch reports that wider relocation allowed the community to purchase mineral rights from the Columbia Quarry Company, converting the limestone quarry underneath into a warehouse complex, which now houses the National Archives and Blueline Food Service [55]. This points to increased tax collections.

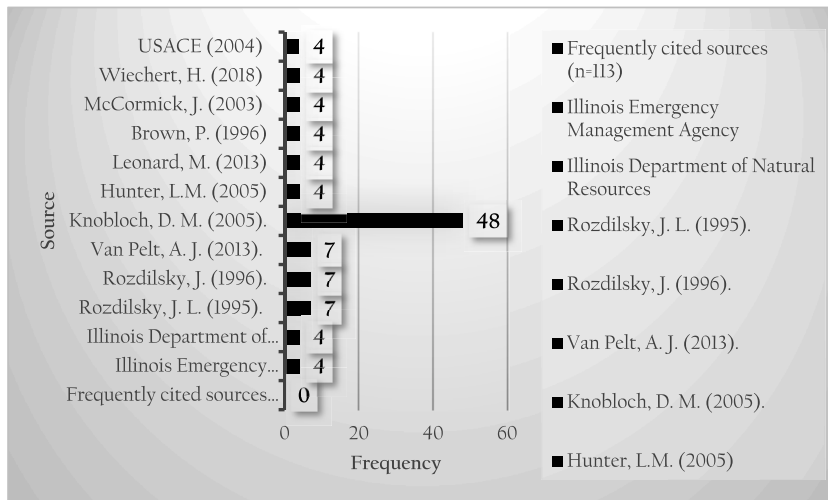


Fig. 3. Frequently cited sources (n = 113).

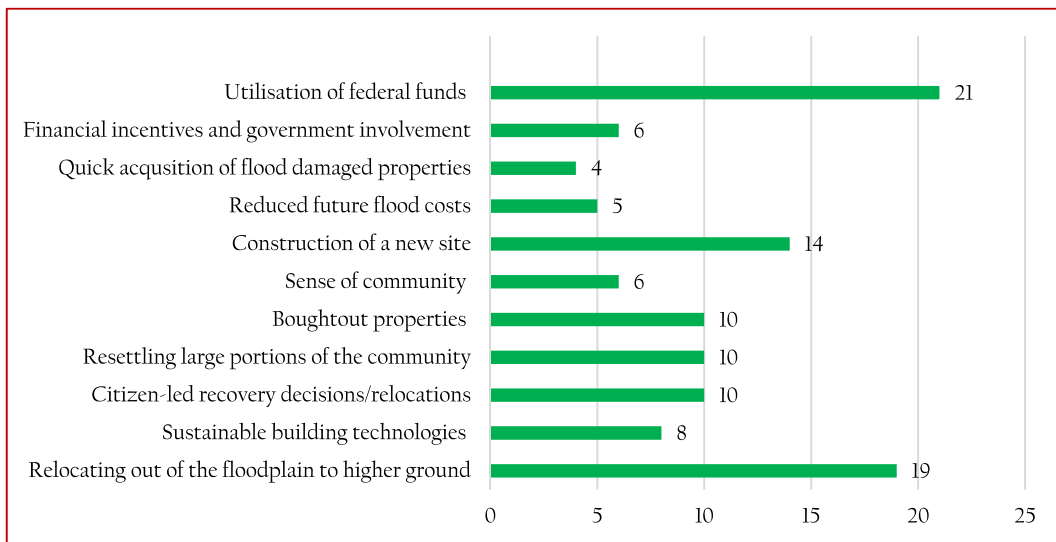


Fig. 4. Broad literature descriptions of Valmeyer (n = 113).

4.3. What is overlooked in descriptions of valmeyer?

4.3.1. Time lag and implications on the business community and recovery

The majority of residents in Valmeyer lived in FEMA-provided trailer homes, with friends, or in rental units in other towns for up to two years while their new homes were being constructed. Residents who could not wait to start their lives all over moved elsewhere [60]. Dennis Schreder, who became mayor in 1997, remarked, “The longer you wait to get people back in homes, the more likely they are to leave” [60]. While Valmeyer is frequently cited as a complete community resettlement, 75% of businesses (n = 22) stepped out of Valmeyer leaving only 25% (n = 7), later dropping to 18% (n = 5) [48]; Pinter (2021) reports, “the lack of commercial establishment in the central town still persists today” (p.5). This observation is different from Pinter and Rees’ argument that “Valmeyer maintains a robust local commercial sector and is widely regarded as a financial and social success” (2021, p.501). A couple of structures such blocks of ‘Main Street’ commercial structures remain incomplete. To some residents, “it [relocation] wasn’t the best business decision” [55]. A recent investigative journalism article by Rachel [61] reports that in the new business district, enterprises such as the bank, restaurant, pub, beauty salon and barber failed to take off, some of which moved to the neighboring town (e.g., Waterloo, St. Louis) or closed entirely.⁹

⁹ In Old Valmeyer, the pub has a particular social purpose, but this has now been replaced by a gas station outlet, limiting local interactions.

4.3.2. Community composition and social disruptions

The Valmeyer community is frequently constructed as homogenous, and the decision to relocate as one direction of travel: “Valmeyer residents knew, somehow, that they had to transplant Valmeyer’s heart” (Brown 1996). Valmeyer had a pre-disaster population of 897, with the related declining demographic trend blamed on out-migration and floodplain designation (Table 2) (IOM 2015). This reports differs with Pinter and Rees (2021) who argues “Valmeyer experiences a population growth prior to its flood and relocation” (p.507). About 60% of Valmeyer residents relocated (a relatively higher rate in the US), but some did not move together with the community. Pinter and Rees (2021) add, “the 1993 flood and subsequent relocation of Valmeyer drove a 32% population drop between 1990 and 2000 Census (p.514), similar with Peiser and Forsyth (2020) who reported 250 people dispersed to different towns while 50 more stayed behind. Those who rebuilt combined with people who left Valmeyer completely, “allowed outsiders who wanted to settle in the New Valmeyer to be part of the new Valmeyer” [55]. Current residents of the ‘New Valmeyer’ comprise those who moved from ‘Old Valmeyer’ (about 54%) whilst the balance 46% relate to new families/entrants from outside the village as strategy to maintain the economic and tax base [56]. Some residents argue the resettlement benefited Valmeyer which was dying “because of floodplain restrictions that heavily limited new construction” [60]. However, residents have continued to express intimate knowledge of ‘Old Valmeyer’ and reveal a mixed picture of a sense of community after relocation. Some residents longingly remember ‘Old Valmeyer’ saying that “I love the [new] town, ...but it’s not home” [55]. How much loss of community was a result of the relocation is a big unknown.

Nearly 40% of the pre-flood population did not relocate [62], but Valmeyer remains overwhelmingly homogenous, with 98% of the population identifying themselves as white, which might point to potential inequalities (see Ref. [61]. Meanwhile, Valmeyer did not achieve its pre-disaster population for several years in part due to lack of affordable housing for modest and low-income residents [60]. Whereas Pinter and Rees (2021) report a 140% demographic rebound of Valmeyer of its pre-disaster population, there is a corresponding lack of concrete data on the demographic profile of those that did not relocate or those who were offered the buyout, but decided to rebuild. The profile of these excluded residents, such as renters and other non-homeowners is equally less known.

4.3.3. Legacies of imposed land-use changes

‘Old Valmeyer’ sprawled across 600 acres (240ha), but ‘New Valmeyer’ was tightly built on 280 acres (110ha) of open cleared land and another 220 acres of woodland. The community lost 320 acres (130ha, 53% of the land), potentially altering relationships between people and their environment [83]. More widely, only now are policy assessments emerging around legal and corporate strategies for acquiring and governing land to relocate a community [19,21].

4.3.4. Bureaucratic complexities as a barrier

While Valmeyer residents and officials invested many hours in developing initial relocation plans, and made difficult social and financial decisions, buyout participants complained about bureaucratic complexities. Local officials reported difficulties dealing with over 25 states, federal, and local agencies involved in the review and relocation process, arguing: “Following one agency and its rules could easily put one at odds with other agencies who advanced their own rules and guidelines” [55]. And that in some cases compliances with a state regulation forced non-compliance with federal regulation, and/or vice versa [54]. For instance, environmental and legal processes were advanced whilst calling for local coordination of the buyout itself (demolition and clean-up of flooded properties). This raised capacity challenges, affecting the effectiveness of buyout processes. For local communities facing limited human resources and competing disaster needs, wandering through the myriad of government policies can lead to a lack of trust in the process as well as a limited success of buyouts. Federal processes and related delays to the project have been blamed for causing a few more residents to abandon their plans to relocate to higher grounds in Valmeyer, opting to rebuild or purchasing new homes in the neighboring community.

4.3.5. Financial burdens, housing, and recovery dynamics

Early newspaper articles reveal community concerns about delays in availability, adequacy, access, and utilization of federal and state funds [63]. Many costs related to buyouts accrue at a local level while benefits across scales (e.g., lower community insurance, avoided national disaster recovery costs). For a community with a pre-disaster annual budget of \$300,000, upfront costs to guarantee federal funding, even where matching requirements are waived, created a huge burden. Valmeyer started the relocation process with approximately \$7.25 million debt, accrued mainly from the acquisition of the new property. The village contracted a loan to buy a rock

Table 2
Pre-and-post disaster demographic changes in Valmeyer (in [56]).

		Pre-disaster	Post-disaster
Year		1990	1998
Population		897	496
Housing units		337	181
Gender (%)	Male	48	45%
	Female	52	55
Age Characteristics (%)	18 & Older	69	45
	60 & Older	52	55
Marital Status (%)	Single	23	16
	Married	69	70
	Divorced	0.7	5
	Widowed	11	9

quarry for conveyance purposes, with the village paying off the debt for the relocation project by 2002. Pinter (2021) reports Valmeyer was moved as a cost of approximately \$70,000 - \$80,000 per person. Residents of Valmeyer received various forms of assistance including low-interest loans and property buyouts themselves. Specifically, FEMA paid the difference between the market value of old homes and insurance coverage on those homes, but this “left a sizeable gap for many who were buying new and modern homes,” as one resident, Barbara Kendall, expressed unhappiness with the process of purchasing a new home: “It is like being newlyweds in your mid-40s. I won’t be able to retire when I want to” [60].

4.3.6. Environmental concerns and changing development plans

There are reports that show that the community relocation envisioned by local officials and residents was not exactly what was ultimately achieved [55]. State and federal entities took over key decisions, limiting space for local participation based on technicalities and lack of local capacity. Documentaries show expert pressure and knowledge was particularly visible in shaping what was ultimately accepted and achieved in the relocation of Valmeyer [55]. For instance, three phases of archaeological investigations were performed on the relocation site. Environmental assessments removed some lots from the original plan because of infringement onto a state-designated natural area inventory site. Legal processes around underlying mineral rights and land ownership created further delays in the start of construction activity with huge implications on funding given that additional funding had to be secured to complete extra processes.

4. Discussion: are there limitations in relying on the past construction of success in understanding relocation as determinants of future success?

Policy mechanisms for facilitating the permanent relocation of residents and properties out of areas at risk for future disasters raise significant programmatic and social justice implications, and must be understood beyond simply speed and efficiency (Greer and Binder 2016; [64,65]). This paper raised more questions than originally thought, most importantly questioning the whole idea of success itself: who defines success? Success for whom and using what matrix? How do processes and outcomes intercept with justice issues? Seeing through these questions to imagine successful relocation is probably to imagine a clear role of the affected community in not only participating in relocation processes, but also in exercising agency and making decisions in support of their well-being. In Valmeyer, what is defined as success by different actors includes the acquisition of properties, construction of new residential and business areas, incorporation of sustainable building technologies, as well as future avoidance of disaster costs. These definitions of success become problematic when considering what is left out or overlooked, including elements that may be relevant for effective forms of community recovery and social justice [36]. The empty business district and streets show Valmeyer was a blueprint that was never quite fulfilled. As [61] notes, “[r]ebuilding Valmeyer was a notable feat, but it does not necessarily represent a roadmap for the future.”

These definitions of success in Valmeyer are somewhat narrow and limiting, focusing far more on the removal of families from the floodplain, and less on eventual outcomes for those families – of geographical exposure to hazards while ignoring social risks/dynamics [3]. Little attention was devoted to outreach toward individual households in Valmeyer regarding adaptation options, site design, and complex social realities of the community. This somewhat techno-managerial approach may have undermined the role and importance of critical community voices and may probably take away from holistic framings of success. The picture of success in Valmeyer becomes complicated when considering less emphasized elements in the literature. There are unanswered questions about lost sense of community, disruptions to social networks, and how buyouts implicate land-use dynamics. Overlooked elements in the construction of success include potential harms that may flow from assumptions of success. For instance, failure to transition businesses from old to new sites remains a persistent flaw in US buyouts and relocations. This can be a target for any policy reforms to facilitate failures of future buyouts and relocations programs (Pinter 2021). The relatively short history of organizing to bring resources and support for the Valmeyer buyout seems to have had implications on the nature and extent of community involvement, and what was ultimately achieved. There is currently no singular national agency or policy framework that guides community resettlement despite growing calls for one [66,67]. However, community-led relocations cannot rely on bureaucratic goodwill and discretion, which raises the need for legally binding policies (Jesse 2020).

Success can mean different things to different actors even within the same disaster and buyout context: FEMA, state government, municipal leaders, affected people, and other stakeholders. Thus, there are wider considerations that must come to bear in framing successful relocation, such as accountability and fairness for affected groups beyond property owners and federal agencies. Of course, people’s perceptions of success can be altered by the scale at which these questions are being considered including the timeframe, which raises the need for longitudinal analyses [68]. However, the case of Valmeyer shows current discourse on disaster recovery in the US generally serves non-property owners in disaster-affected communities poorly: their visibility in existing policy and legal mechanism is minimal and their inclusion in recovery from a social justice perspective is construed as a problem [36,37]. In Valmeyer for instance, what often is described as community-led relates to the role and importance of elected officials in convincing local people to consider relocating from the floodplain. Legal and policy frameworks were relied upon to make relocation decisions, but in actual implementation of those decisions, what is permissible and what can be funded under the law rarely mesh [21] due to federal agency restrictions and how they shape decision making at various levels [13]. Literature on devolution of federal decision-making calls for movement of responsibility from the top-down approach to local actors as ‘proximate’ stakeholders – a political-geographical formulation [3]. In the current program implementation, focusing on the role of implementing agencies and authorizing legislation seems to shape what success looks like, which can be limiting [37,69].

Key federal policies that support buyout programs require motivated local and state leaders to trigger processes that open

bureaucratic space and discretion on oversight, approvals, and community coordination [62]. It is widely acknowledged, however, that condemnation powers, specifically the enforcement of ‘substantially damaged’ findings, used by federal agencies and supported by existing policy and legal frameworks have often disadvantaged poor communities [6,13,37]. In Valmeyer, top-down decisions were made to bear in property design features [59]; GTCC 2020), overlooking community perceptions and visions of relocation. Valmeyer leveraged state and federal funds to actualize the buyout, but at the federal level, local plans cannot similarly be made to bear on policy practice, defeating prospects for community-led relocations (Jesse 2020). Decisions about where to invest resources, which communities to protect, and how to proceed that are advanced by state and federal agencies have raised calls for transparency [26]; de Vries and Fraser 2020). There is an argument that decision making in buyouts is subjective, produces inequalities and is driven by political influence that lacks transparency [29]. Lack of standardized policies and procedures across local, state, and federal agencies can make relocation problematic for disaster victims. Overall, this produces simplistic binaries (of included and excluded) and competitive tendencies in the way buyouts are actualized. As with Valmeyer, it is likely communities might choose to rebuild in risky areas as opposed to taking a buyout or make socio-economic and environmental compromises along the way to fulfil federal requirements at the expense of infusing their version of relocation in disaster policy and practice. These processes must be accounted for and integrated with community visions of success. Overall, focusing on a ‘successful relocation process’ may not always lead to ‘successful relocation outcomes’ as a highly consultative processes that respects community members’ wishes, which can result in poor outcomes (Jesse 2020).

This study encourages us to reflect on key lenses on how success in buyouts can be approached as an emerging research agenda. The paper advances the need to pluralise the understanding of success in buyouts/relocations (within human geography, social science change, anthropology and administration) and the various processes through which federal agencies frame these interventions. The review thus suggests frequently cited ingredients for relocations such as federal and state dollars, local buy in and existence of alternative land close by may not be the only prerequisite for success and recreating a community, as well as preserving some semblance of original character and history. These processes are complex, political and shaped by different interests. Yet, current assumptions and understanding of successful relocations fail to disrupt meanings of ‘community’ and look critically at its representations. As a result, buyouts and relocations face a general lack of corresponding insights on scope of response pathways and its specificity in local context. This is often an issue ignoring local politics, presenting buyouts as a technical projects than a set of very difficult political and economic choices to be negotiated socially and culturally [70]. This under theorisation affects wider production/reproduction of inequalities, raising limitations of relying on past constructions of success as determinants and basis for future success.

There is no one-size-fits all success model of relocation, as such, scholars continue to theorize requirements for successful retreat [70]; success in relocations, equity and justice [71]; and the extent to which rebuilding drives recovery [80]. However, a focus on physical transition away from sites exposed to hazards should be advanced alongside transformation of institutions, social networks, cultural associations, economic relationships and other aspects of community’s way of life [72]. This includes a reflection on entangled action, learning and capacity. Administrators should tailor programs to community geographies, histories, and cultures – explicitly and transparently. This requires commitment to long-term learning and across programs – beyond heuristic short-cuts [73]; Geer and Binder 2016). The centrality of these processes point to co-production of knowledge and social values – “collaborative processes of bringing a plurality of knowledge sources and type together” [74]:996). There are examples of coproduction in the context of managed retreat such as provided by the Baan Mankong (“Secure Housing”) programme in Thailand. This is an existing state-funded planning framework for the redevelopment and/or relocation of informal settlements, facilitating disaster rehabilitation and managed retreat [75]. In their piece entitled “Lessons from CODI on Co-Production” [76], reveal dramatic changes in the role of Government from providers to facilitators of community-driven local housing co-production, resulting in improvements to the housing conditions. Here subsidies and technical supports to community groups were advanced in such a way as to allow local groups take a primary role in the planning process by conducting community profiling, needs assessments, identifying sites for redevelopment as well as having control of project finances and oversight over the redevelopment process [76]. This includes progressive multi-stakeholder collaborations, providing clear roles for technical experts, “to provide the right guidance without controlling all the processes” [77]. [73] reveal 4 important domains for consideration: 1) Which residents to offer buyouts? How to decide? Who participates in deciding? 2) If budget is fixed, purchase fewer homes (at higher price) or more homes (lower price)? 3) Provide less support to more residents or more support to fewer residents? At what point is offering more coercive? 4) How to weigh uncertain costs and benefits? Which stakeholder costs and benefits are included? (scale)? How to handle disagreements on what to include or prioritise? Addressing these and related questions can greatly improve scope for community participation in buyouts, and greater assumptions of success. As with [76]; working at scale, building partnerships and collaborations at all levels, flexible financing arrangements, linking community’s systems and Government systems, and continuous adjustments of institutional responses to changing realities on the ground can be important pillars for ensuring success in buyouts.

5. Conclusion

This study has shown there are clear limitations in relying on past construction of success in understanding relocation as a determinant of future success. While flood disaster recovery in the US generally encourages more dollars in buyouts, success itself is complex and ambiguous. The concept of ‘success’ is highly contested and context-dependent [71], but what is seen in Valmeyer is a narrow as opposed to a broad-based construction of success that should account for diverse social dynamics of a buyout. There are questions about how to track data at the local level, such as who accepts or reject buyouts and why. Ultimately, buyout narratives have often been taken on trust, integrating into political ideologies of success. It can be argued that causes and effects of buyout successes

are, at best, intuitive, anecdotal, or based on correlation and implied causation. For instance, where a buyout offer is agreed upon and taken up by 60% of eligible homeowners – as was the case in Valmeyer – the lesson learned and advanced is that there is success here. As a result, a wider prospective optimism is that significant success and progress have been made thus far, but there is a lot that can still be done – better federal dollars. That may be true, but this must consider local community dynamics, which might affect not only how the buyouts are applied, but also how community concerns might be viewed, such as what is lost in the process. Missing are critical community voices across different social units. This leads to the question: can a situation in which federal disaster recovery objectives are declared to have been unsuccessful be imagined, and question the entire architecture of federal disaster recovery? The answer to this is fairly complicated, as success has been framed in a way that defeats opposition: how can one be against more disaster funding? And herein lies the problem. However, rather than a somewhat exclusive focus on programmatic processes and removal of families and property from floodplains, more should be done to understand different social categories and how they are affected differently by disasters and the response pathways they ‘choose’ to take. The centrality of this argument points to the role and importance of local agents and participants in accounting for material and non-material changes as buyout outcomes. Doing so will help to shed light on the gap between theoretical and policy commitment to social justice issues including equity in federally backed buyout programs.

Buyouts and relocations continue to burst into academic and policy spaces raising the need for a serious social and anthropological agenda capable of understanding processes, response pathways and outcomes, and map these into actionable frameworks, plans and tools to be relied upon. Researchers must synthesise lessons and provide guidance from the accumulating body of knowledge of what works and why it works and who thinks it works. Some of these relate to how co-production of knowledge and social values can be made central features of managed retreat.

Declaration of competing interest

We have no interest to declare.

Data availability

Data will be made available on request.

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Appendix A. Supplementary data

Supplementary data to this article can be found online at <https://doi.org/10.1016/j.ijdr.2023.103863>.

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