

环境原理： 中国西北地区生态现代化工程分级权利的 调和策略

AN ENVIRONMENTAL RATIONALE: STRATEGIES TO RECONCILE THE GRADUATED INTEREST OF NORTHWESTERN CHINA'S ECO-MODERNIZATION PROGRAMS

1 引言

宁夏回族自治区位于中国西北部。由于当地长期受到过度放牧、土壤荒漠化，以及城乡收入差距持续扩大等问题的困扰，中央及地方政府牵头实施了多个生态现代化工程。本文以该地区为例，探讨大规模环境工程之间的重叠与冲突（图1）。

这些生态现代化工程^[1]包括1978年的三北防护林工程、1997年的“吊庄移民”^①及宁夏扶贫扬黄灌溉工程（“1236”工程）、1999年的天然林保护工程及退耕还林工程，以及2003年的退牧还草工程。这些工程项目共同构成了一种再地域化的形式，即基于环境和经济因素（如坡度、水资源可利用量和行政区域的生产总值）对研究对象进行划分和重新定位。

地理学家叶婷认为这些大规模环境工程体现出了一一种分级主权^[2]。这一概念由王爱华于1999年首次提出，是指为了满足特定区域的特殊需求而采取的不同的人口管理模式和多样的政策调控组合形式^[3]。“分级”一词暗示了权利分类的广泛性，这可能是由于上述工程多涉及移民安置及补偿问题。这些工程的基础设施投资主要来自民间资本和境外资本，这使得项目所在地与全球经济的联系更为紧密。这些生态现代化项目虽然旨在恢复和改善农村环境，但最终使该地区产生了不同的人口层级和权利模式。

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摘要

在1980~2010年，中国中央政府在西北地区主导了一系列环境工程，包括三北防护林工程、“吊庄移民”及宁夏扶贫扬黄灌溉工程、天然林保护工程、退耕还林工程，以及退牧还草工程。本文以宁夏回族自治区为例，探讨了大规模生态现代化工程之间的重叠与冲突。通过阐释农业综合发展下的分级权利并对三个案例设定远景，本文认为上述工程在生态现代化框架下具有一定的局限性。相比生态现代化的视角，结合了保育移民与生态移民的二元框架更能够评估这些工程中复杂的相互作用与矛盾冲突，从而优化资源分配，并探索中国西北部地区绿化工程的替代性方法。

关键词

宁夏；生态现代化工程；分级权利；重新安置；保育移民；生态移民；二元框架

ABSTRACT

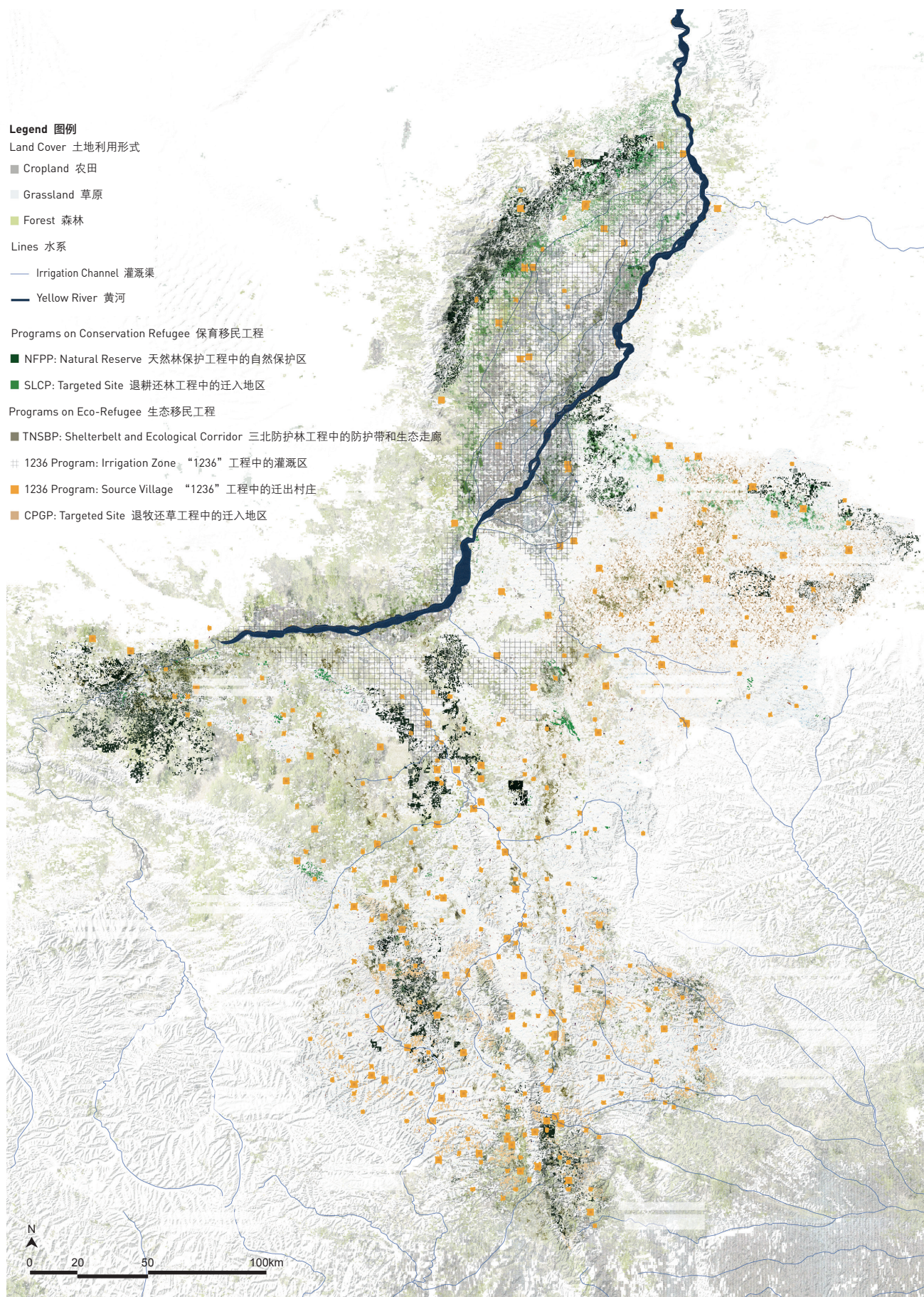
From 1980 to 2010, the Chinese government introduced a set of environmental programs across northwestern China, including Three-North Shelterbelt Program, Suspended Village Migration, 1236 Yellow River Irrigation Program, Natural Forest Protection Program, Sloping Land Conversion Program, and Converting Pastures to Grasslands Program. Focusing on the Ningxia Hui Autonomous Region, this paper explores the overlaps and frictions between China's large environmental programs, and reveals some of the limitations of these programs in the eco-modernization framework by studying the graduated interest under agricultural comprehensive development and scenarios in three case studies. Compared with the insights from eco-modernization, the conservation refugee and eco-refugee binary framework could review complex interaction and overlapping histories from these coexisting programs, so that resources could be distributed better and alternative ways of greening work of northwestern china could be explored.

KEY WORDS

Ningxia; Eco-Modernization Programs; Graduated Interest; Resettlement; Conservation Refugee; Eco-Refugee; Binary Framework

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① 将贫困地区人口整体跨区域搬迁。



1. 宁夏回族自治区环境地图

1. Context map of Ningxia Hui Autonomous Region

Natural Forest Protection Program (NFPP)

天然林保护工程

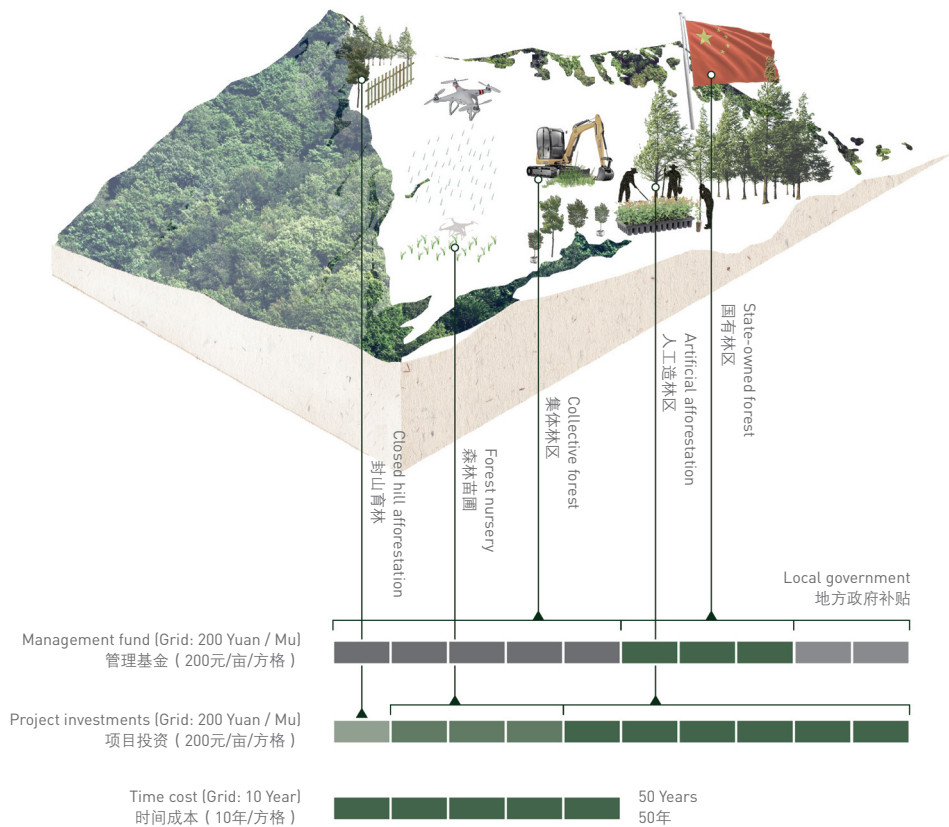


- ① Logging sites on sloping land
坡地上的伐木区
- ② Upper and middle reaches of the Yellow River
黄河中上游
- ③ State-owned forest
国有林区

- ④ Shifting cultivation no longer possible
耕地轮作不再可能
- ⑤ Negative impacts on local livelihoods
对当地人口生计带来负面影响
- ⑥ Impact of cash crop plantation not considered
种植经济作物的影响未被考虑在内
- ⑦ Eco-tourism
生态旅游

- ⑧ Rehabilitate forest over 30 million hectares
恢复超过3 000万公顷的森林
- ⑨ Community management
社区管理
- ⑩ Increase forest cover
增加森林覆盖率
- ⑪ Natural resources as capital
将自然资源作为资本

Landscape features associated with the program
与工程相关的景观特征



- 2. 天然林保护工程景观特征
- 2. Landscape features associated with Natural Forest Protection Program

2 生态现代化项目

天然林保护工程包含60%的集体林和20%的地方财政补贴林^[4]，这导致中央和地方政府在管理方面存在优先级冲突，使得相关政策难以落地（图2）。退耕还林工程的改造对象是坡度大于25°的坡地，这是目前世界上最大的退耕项目^[5]，也是中国首批生态系统补偿项目之一。该工程向农民提供5~8年生活所需的现金或粮食补偿，以期打破贫困与生态退化之间的恶性循环（图3）。尽管成效显著，但也有人认为退耕还林工程忽视了地方森林管理的长期努力以及地区差异^[6]。

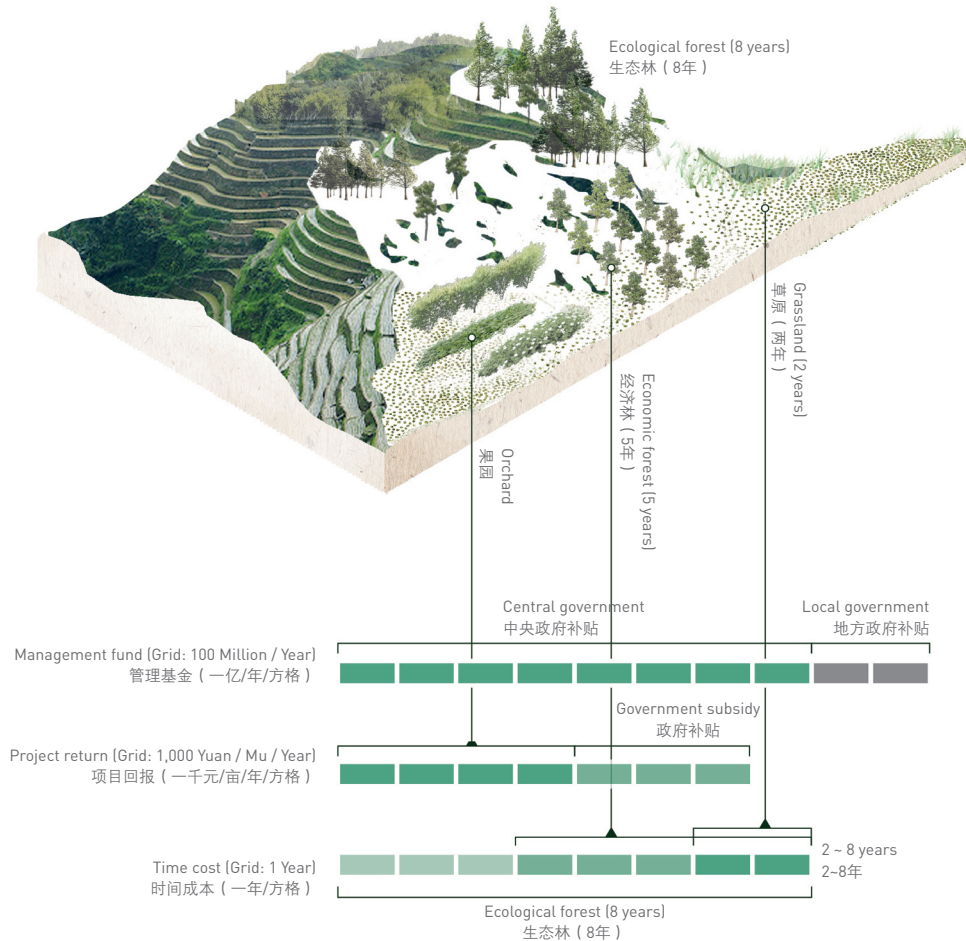
三北防护林工程主要由世界银行资助，建造周期为70年。该工程在很大程度上坚持遵循国际标准及规范^[7]，其项目补贴与其他拥有较少或不同标准的生态工程相比可能存在巨大差异（图4）。“1236”工程是中国历史上最大的环境迁移工程，旨在将中国南部山区的100万贫困人口迁居至200万亩的可灌溉土地之上。通过利用黄河水源进行灌溉，原本一望无际的干旱土地有望被改造为农田。该工程的建设投资为30亿元人民币，项目周期为6年（图5）。^[8]退牧还草工程与退耕还林工程类似，但它并未在牧民安置方面给予任何激励措施，而是将他们全部迁出。牧民在出售牲畜后会得到补贴，而他们需迁居到新的安置点生活10年之久（图6）。^[9]

3 农业综合发展下的分级权利

早在1960年，为了提高生产力，中国农业部就中国西北地区大致划分为三个区域，即限制区、保护区和优先区。这种区域划分体系即为一种早期的分级权利，它在过去半个世纪里推动了中国生态现代化项目的实施，并为上述环境工程及移民安置策略提供了指导^[10]。

一般而言，实施天然林保护工程和退耕还林工程的区域生态本底较好。通过运用分级权利的概念，本文将这些区域内的人口视为保育移民，由于这些人口会对环境产生负面影响，因而需要被重新安置。天然林保护工程旨在保护山区森林，而退耕还林工程的目标对象是坡度大于25°的农田。

三北防护林工程、“1236”工程及退牧还草工程区域内的人口被称为生态移民。重新安置这些人口是由于环境危机已对他们的生存构成了威胁。三北防护林工程的目标区域是沙漠边缘地区，“1236”工

Landscape features associated with the program
与工程相关的景观特征

程以农村GDP增长为目标，旨在解决贫困问题，而退牧还草工程涉及的主要对象是在荒地上放牧的回族牧民。

虽然中央政府对这些环境工程进行了雄心勃勃的规划，但由于治理工作过于庞杂，这些工程存在不同层级之间的管辖重叠^[11]（如自治区政府和中央政府的双重管辖）以及同一层级不同项目之间的管辖重叠（如“1236”工程、退耕还林工程、退牧还草工程都涉及农牧业土地的再分配问题）。

4 保育移民与生态移民的二元框架

在过去30年间，这些生态现代化工程逐渐发展出了一些共同原则。虽然这些原则不一定适用于所有情况，但本文运用了其中一些原则（如倾向于给予长期补贴而非一次性补偿，或倾向于选择集体所有制而非国有经营的基础设施^[12]），并从机会角度对这些工程中分级权利的驱动因素进行梳理。

作为一种设计策略，本文选取了三个简单案例呈现三种不同的保育移民和生态移民在迁出村庄和迁入地区的安置方案。案例一展示了保育移民和生态移民同时迁移的愿景，案例二展示了保育移民先行迁移的愿景，案例三则展示了生态移民先行迁移的愿景（图7）。

5 案例分析

如图8所示，每个空间都进行了灰度值编码，代表不同空间得到的发展机会。例如，在案例二中，保育移民均得到一块面积为150m²的土地以及土地上的房产作为补偿，而生态移民仅作为劳动力移民被迁出，没有得到任何土地补偿。本文的设计策略即要考虑到这些差异，以决定在何种情况下允许移民返回原址或定居新址。通过逐步消除迁出村庄和迁入地区的负面条件或为之创造更多发展机会，我们可以利用现有的分级权利实现环境调节，既可确保上述工程中涉及的人口在有更多机遇的地方生活和工作，也能最大限度地降低人类活动对环境造成的伤害。

虽然本文在探索策略时遵循的原则具有普适性，但实际应用还需取决于项目的具体情况。例如在案例一中，仅在迁出村庄的拆迁区域内引入经济作物种植带（图9）。在这一策略下，退牧还草工程不鼓励

Three-North Shelterbelt Program (TNSBP) 三北防护林工程

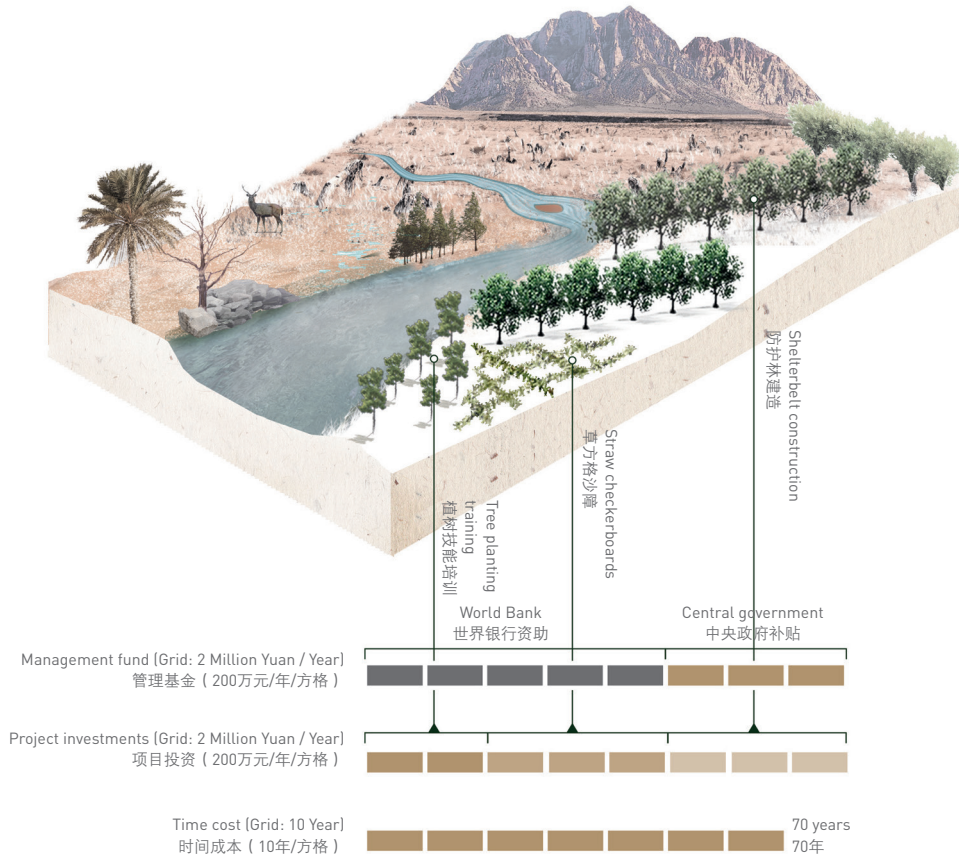


- ① Gobi Desert and Tengger Desert
戈壁滩和腾格里沙漠
- ② Sandstorm area
沙尘暴区域
- ③ Land erosion and overfarming area
水土流失和过度耕种区

- ④ Aerial seeding to cover wide areas
通过空中播种覆盖广阔区域
- ⑤ Offering cash incentives to farmers to plant trees
为农民种树提供现金奖励
- ⑥ Straw checkerboard grid to stabilize sand dunes
用草方格沙障稳定沙丘
- ⑦ Low survival rate — World Bank advises to focus on quality
成活率低——世界银行建议关注质量
- ⑧ Forest and soil quality not assured
森林和土壤质量无法保证

- ⑨ Raising China's forest cover rate from 5 percents to 15 percents
将中国的森林覆盖率从5%提高至15%
- ⑩ Planted forest over 500,000 km²
人工林覆盖面积超过50万平方公里
- ⑪ Gravel platform to hold down sand and encourage a soil crust to form
压实砾石层以促进土壤结皮的形成

Landscape features associated with the program
与工程相关的景观特征



- 4. 三北防护林工程景观特征
- 5. “吊庄移民”及宁夏扶贫扬黄灌溉工程景观特征

- 4. Landscape features associated with Three-North Shelterbelt Program
- 5. Landscape features associated with Suspended Village Migration and 1236 Yellow River Irrigation Program

- ① All inhabitants living in a poor area are migrated to another region in distance.

拆迁人口返回原址^[13]，经济作物种植带的引入是为了确保外迁人口不返回原址，同时为未迁移人口提供新的收入来源。

场地和景观的独特性对于决策制定至关重要。在案例二中，保育移民先于生态移民从场地迁出（图10）。虽然保育移民的生产活动会对环境产生一定的负面影响，但他们亦会参与相关的生态修复工作，这些修复行为可有效提高区域内的农业生产力。所以，保育移民不应该被“一刀切”式地迁移，如果他们先行离开，修复工作也便无法推进。此外，相关研究表明，由于需要投入大量资金，特别是在荒漠化严重的区域，生态移民不适合参与环境修复^[14]。因此，本文建议保育移民返回原址继续参与原有的修复工作，同时为在新址定居的生态移民创造更多机会，如建立农业合作社等，以使其安居乐业。

案例三的迁入地区存在移民补偿和户籍管理混乱的问题（图11）。那些未在迁入地区登记的移民不会获得环境工程补贴，而那些已迁移的人口可能会由于种种原因被再度迁出并再次获得补贴。保育移民和生态移民的二元框架可以通过特定的景观特征更准确地定位移民类型，从而进行更为合理的资源配置，避免因管理的混乱导致人口的反复迁移。

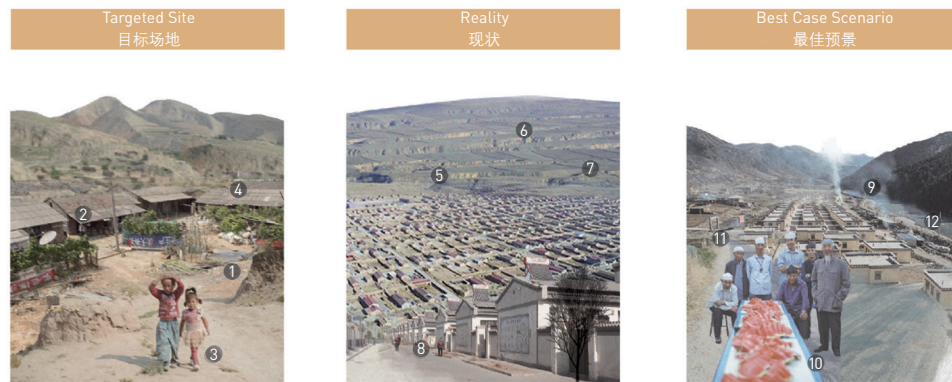
6 结论

综上所述，本文旨在阐释上述大规模环境工程在生态现代化框架下的局限性，并探讨中国西北部地区绿化工程的替代方法。本文认为相比生态现代化的视角，保育移民与生态移民的二元框架更有助于厘清现象背后的本质。生态现代化思想认为生态退化是不可避免的，只要“绿化”即可带来环境的改善；而本文提出的二元框架则旨在引导人们关注资源与人口的分配效应。更为重要的是，其作为分析和设计新方案的实用框架，目的是评估这些工程中复杂的相互作用与矛盾冲突，并做出相应的决策。这一二元框架可以避免对某一类人群的多重补贴或完全忽视。**LAF**

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Suspended Village Migration and 1236 Yellow River Irrigation Program (1236 Program) “吊庄移民”及宁夏扶贫扬黄灌溉工程

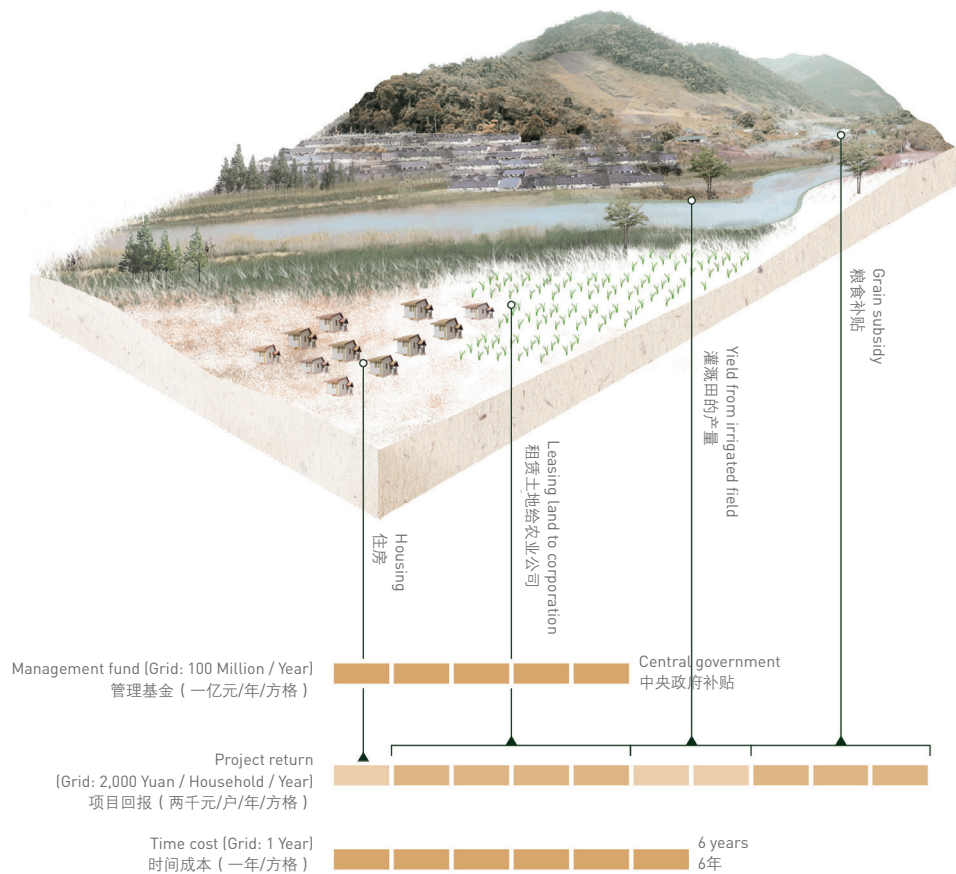


- ① Xihaigu area in Ningxia as source area
宁夏西海固地区作为迁出村庄
- ② Villages under poverty
贫穷的村庄
- ③ 405,000 ecological migrants
405,000名生态移民
- ④ Suspended village
吊庄

- ⑤ Intensify use of water
用水量增加
- ⑥ Loss of compensation from NFPP
失去天然林保护工程的补偿
- ⑦ Re-converting land to cropland
将土地重新转变为农田
- ⑧ Difficulty in getting used to new
livelihood for the minority in ethnic
Han-dominated towns
一些少数民族移民难以适应以汉族为主
导的新型城镇生活

- ⑨ Construct village with basic
infrastructure
建设村庄基础设施
- ⑩ Alleviate poverty
减轻贫困
- ⑪ Increase income
增加收入
- ⑫ Relocate people to villages close
to the Yellow River
将人们迁至黄河附近的村庄

Landscape features associated with the program
与工程相关的景观特征



1 Introduction

Ningxia, an autonomous region in the northwest of China, has suffered from over-grazing, desertification, and a widening rural-urban income gap for a long time, and several eco-modernization programs have been implemented by the central and local governments. In this paper, it is taken as an example to explore the overlaps and frictions between China's large environmental programs (Fig. 1).

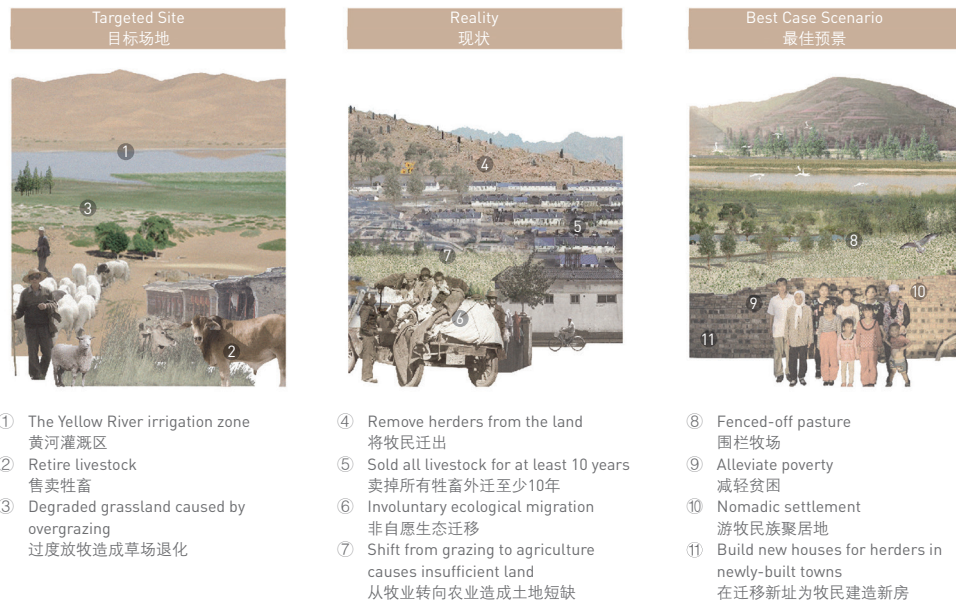
These eco-modernization programs^[1] include the Three-North Shelterbelt Program (TNSBP) in 1978, Suspended Village Migration^① and 1236 Yellow River Irrigation Program (1236 Program) in 1997, Natural Forest Protection Program (NFPP) in 1999, Sloping Land Conversion Program (SLCP) also in 1999, and Converting Pastures to Grasslands Program (CPGP) in 2003. Together, these programs constitute a form of reterritorialization that partitions and relocates its subjects based on environmental and economic factors such as slope, water availability, and GDP by administrative region.

Geographer Emily Ting Yeh claims that these large-scale environmental programs produce a graduated sovereignty^[2] at a national level, which was defined by Aiwah Ong in 1999 as different modes of governing segments of population and different mixes of legal compromises and controls tailored to the requirements of special zones^[3]. The term “graduated” suggests a wide range of classifications — likely driven by the main tools of these programs — of resettlement and compensation. These environmental projects have been accomplished through investment in major infrastructure facilitated by private and foreign investment, linking these places more tightly to the global economy. These eco-modernization programs, although aiming at restoring and improving rural environment, have resulted in different classes of people and modes of interest.

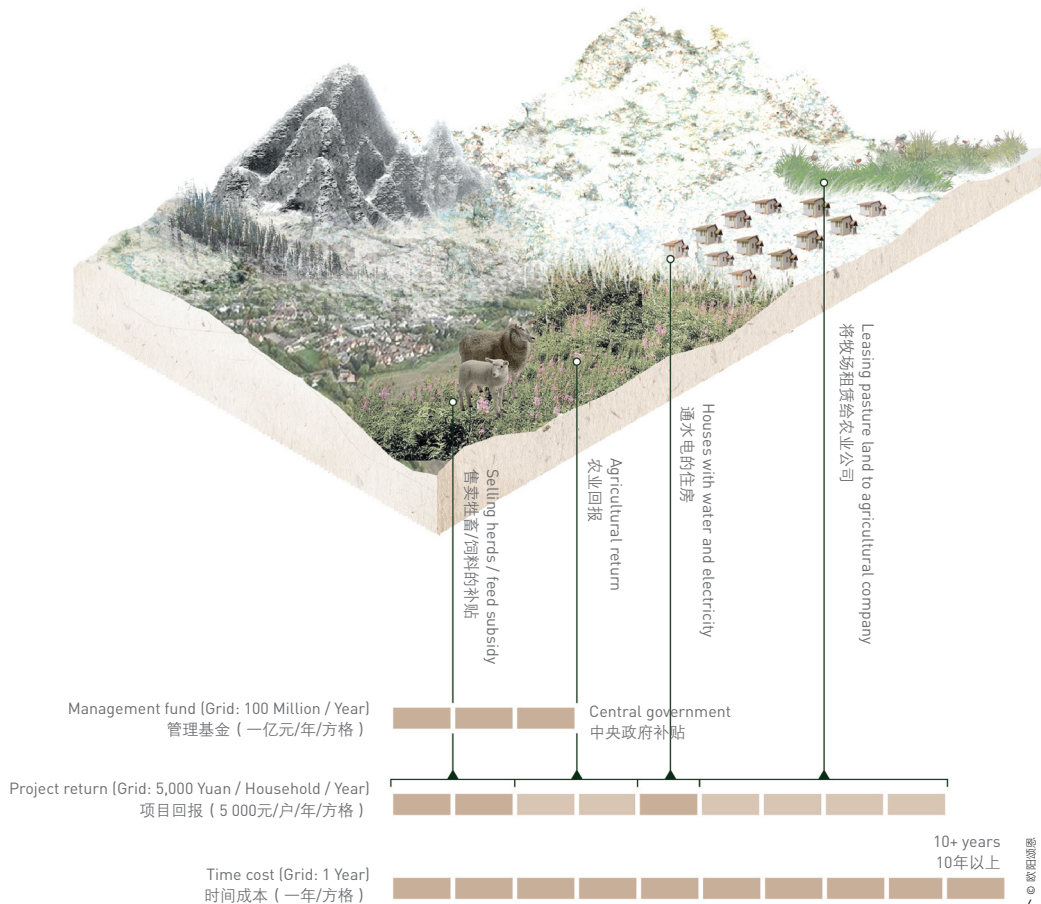
2 Eco-modernization Programs

NFPP constitutes 60% of collectively owned forest and 20% of local-funded forest^[4] and causes conflicts between central and local government priorities, and results in policies that do not translate down to the ground (Fig. 2). SLCP targets croplands on slopes over 25 degrees, which is the largest retirement program in the world^[5] and also one of China's first payment of ecosystem schemes. The program's rationale is to subsidize farmers with cash or grain for five to eight years to break through the vicious cycle between poverty and ecological degradation (Fig. 3). Although it achieves notable results, one of its criticisms argues that SLCP ignored the long history of local

Converting Pastures to Grasslands Program (CPGP) 退牧还草工程



Landscape features associated with the program
与工程相关的景观特征



6. 退牧还草工程景观特征
7. 工程框架

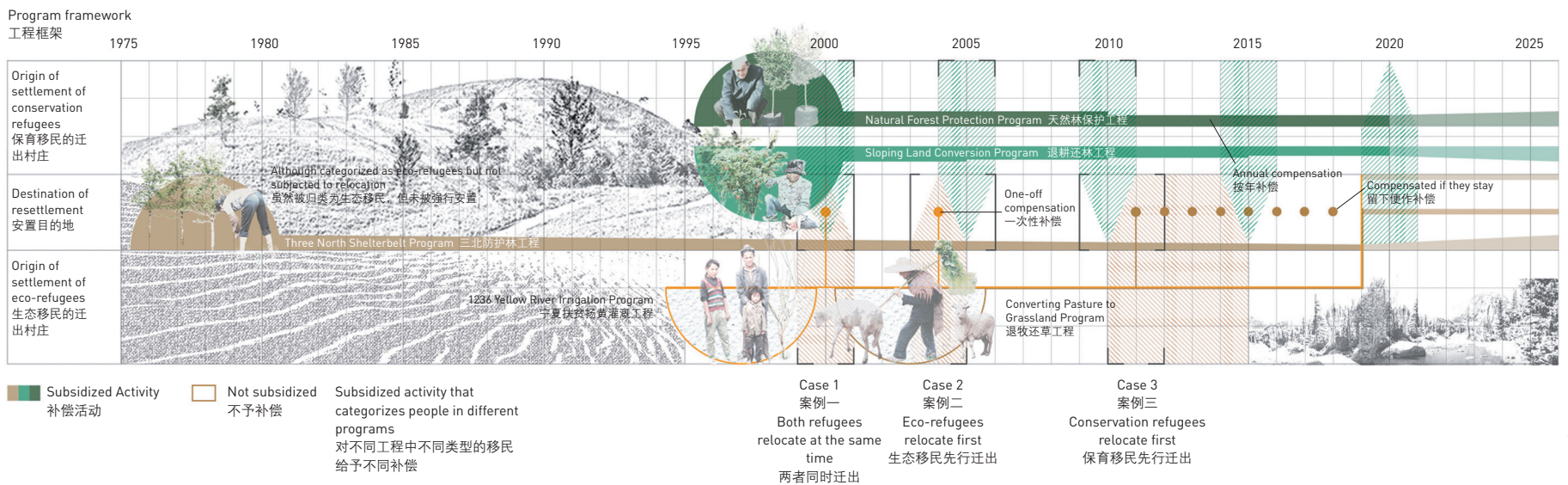
6. Landscape features associated with Converting Pasture to Grassland program
7. Program framework

forest management and the differences between landscapes^[6].

TNSBP, funded mostly by the World Bank, will last for 70 years. The program itself to a large extent is guided by international standards and regulations^[7], and its subsidies may differ greatly from other programs with less or different standards (Fig. 4). 1236 Program is the largest environmental migration project ever in Chinese history. It aimed to relocate one million of poor people in the southern mountainous region to a two million mu (1,333 km²) of irrigated land. By utilizing water from the Yellow River, flat and dry land became arable. The investment on the construction is 3 billion yuan and it would take 6 years to complete the entire project^[8] (Fig. 5). CPGP is a variant of SLCP, yet it does not seek to give herders better incentive to manage, but rather remove them from land altogether. The program subsidizes herders to sell their livestock and move to a resettlement of varying distance away from their home for a period of 10 years^[9] (Fig. 6).

3 Graduated Interest under Agricultural Comprehensive Development

Back to 1960, China's Ministry of Agriculture, in order to increase productivity, defined three broad zones in northwestern China: restricted zone, protected zone, and prioritized zone, which is an early graduated interest. These zones have helped coordinate the implementation of China's eco-modernization programs over the last half century, and have guided the 5 programs and their rationales for resettlement^[10].



Generally, the environment in the areas where NFPP and SLCP targeted is better. With the concept of graduated interest, this paper classifies people under these two programs as conservation refugees, who are relocated because they endangered the environment. NFPP targets mountainous forest areas while SLCP targets croplands on slopes over 25 degrees.

People under TNSBP, 1236 Program, and CPGP are called eco-refugees. These people are relocated because the environment endangered them. TNSBP targets the fringe of the desert, 1236 Program aims at poverty problem based on village GDP, and the CPGP targets ethnic Hui people that herd on barren ground.

While the central government has ambitious plans for these environmental projects, the policies overlapped multiply due to heterogeneous governance. The overlapping power exists between hierarchies^[11] (for instance, the autonomous district government and central government) and between different agencies at the same level, such as the crop division for 1236 Program, agriculture for SLCP, and husbandry for CPGP.

4 The Conservation Refugee and Eco-refugee Binary Framework

There are common principles that have emerged from the development driven by those eco-modernization programs over the last 30 years. While not necessarily true in every specific context, the paper uses some principles, such as preferring long-term payouts over one-off compensation or collective ownership

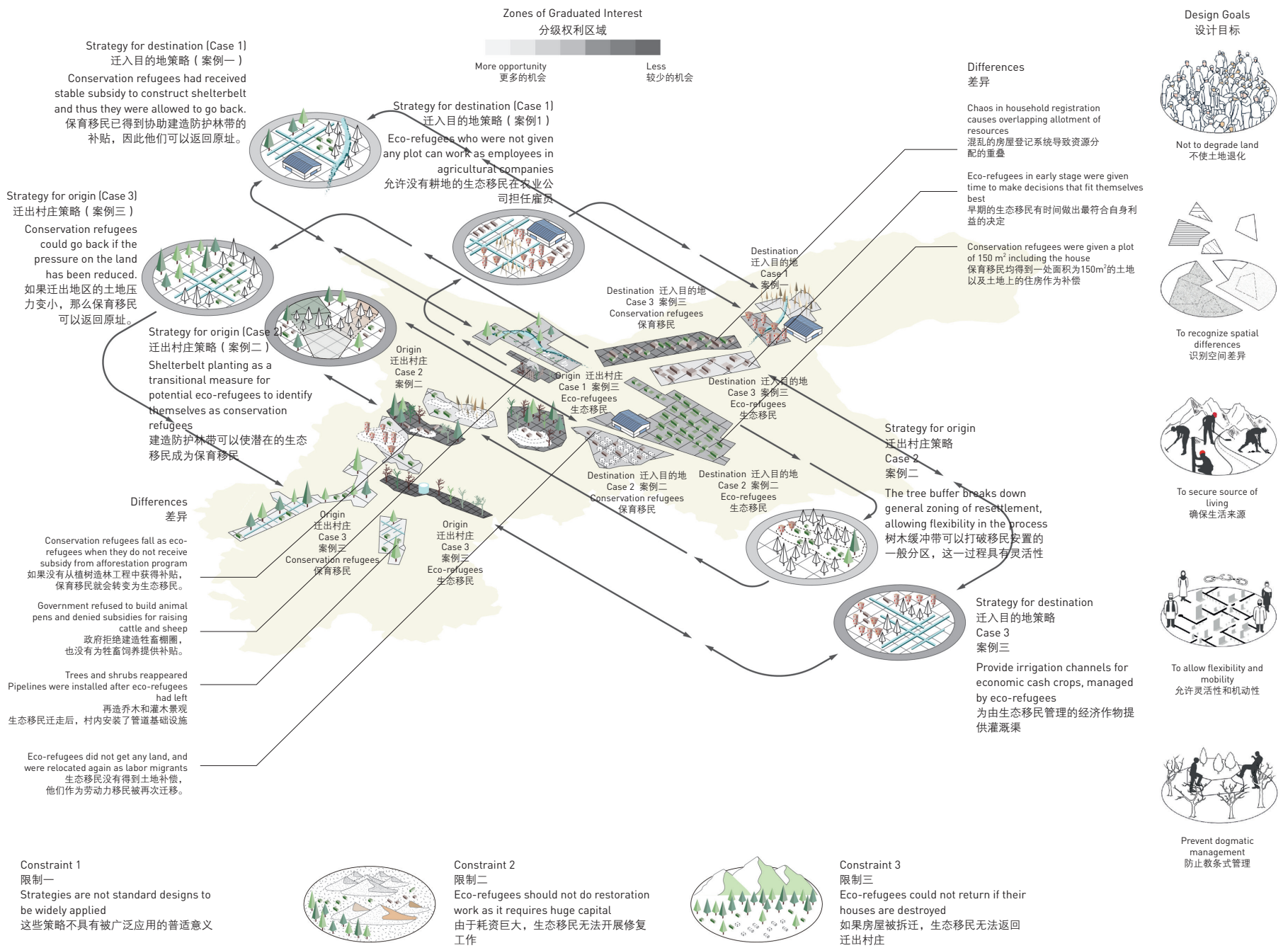
of infrastructure rather than state-operated projects^[12], to rank the drivers of graduated interest found in these programs in terms of opportunity.

As a design strategy, the paper identifies three simple cases, each showing a different mix of conservation refugees and eco-refugees in their origins and destinations of resettlement. Case 1 shows a scenario when both conservation refugees and eco-refugees relocate at the same time. Case 2 shows a scenario when conservation refugees relocate first, while case 3 shows a scenario when eco-refugees relocate first (Fig. 7).

5 Case Studies

As shown in the cases overview, each of them is grayscale coded, suggesting differences in the opportunity they receive (Fig. 8). For example, in Case 2, conservation refugees were given a plot of 150 m² including their houses while eco-refugees did not get any land and had moved out as labor migrants. The design strategy is to consider these differences, deciding to what extent refugees are allowed to go back or to stay. By phasing out some of the negative components or introducing opportunity to either the origin or the destination of resettlement, we can smooth out and take advantage of the existing graduated interest conditions. In simpler terms, this is to ensure people, collectively across programs, to live and work in places with better opportunity and to minimize impact on the environment.

While the principles this paper follows to explore strategies can be generally applied, the specific context determines the



8. 三个案例中迁出村庄和迁入目的地的移民安置策略

9. 在案例一中, 保育移民和生态移民同时迁移。

8. Origins and destinations of resettlement in three case studies

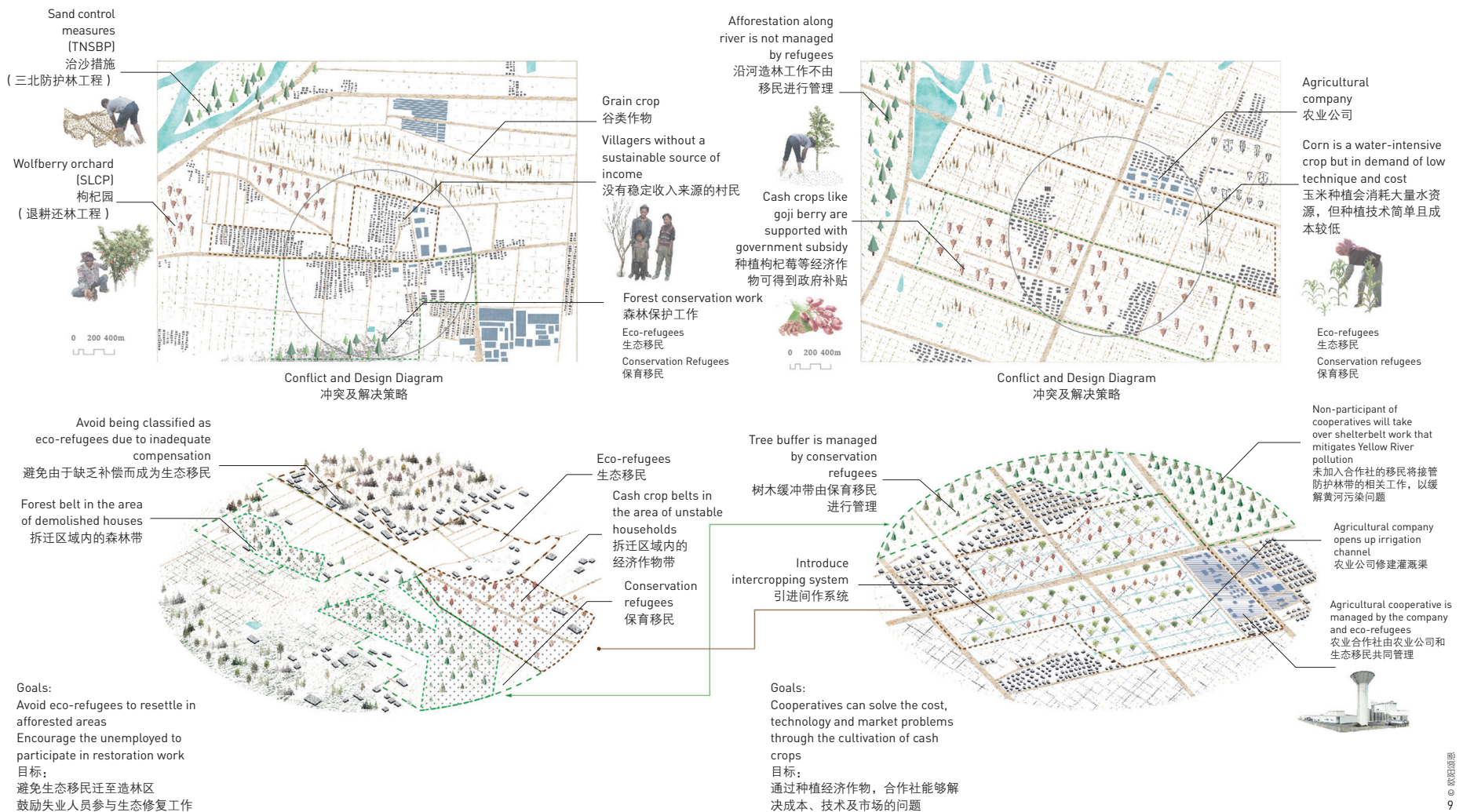
9. In Case 1, both refugees relocate at the same time.

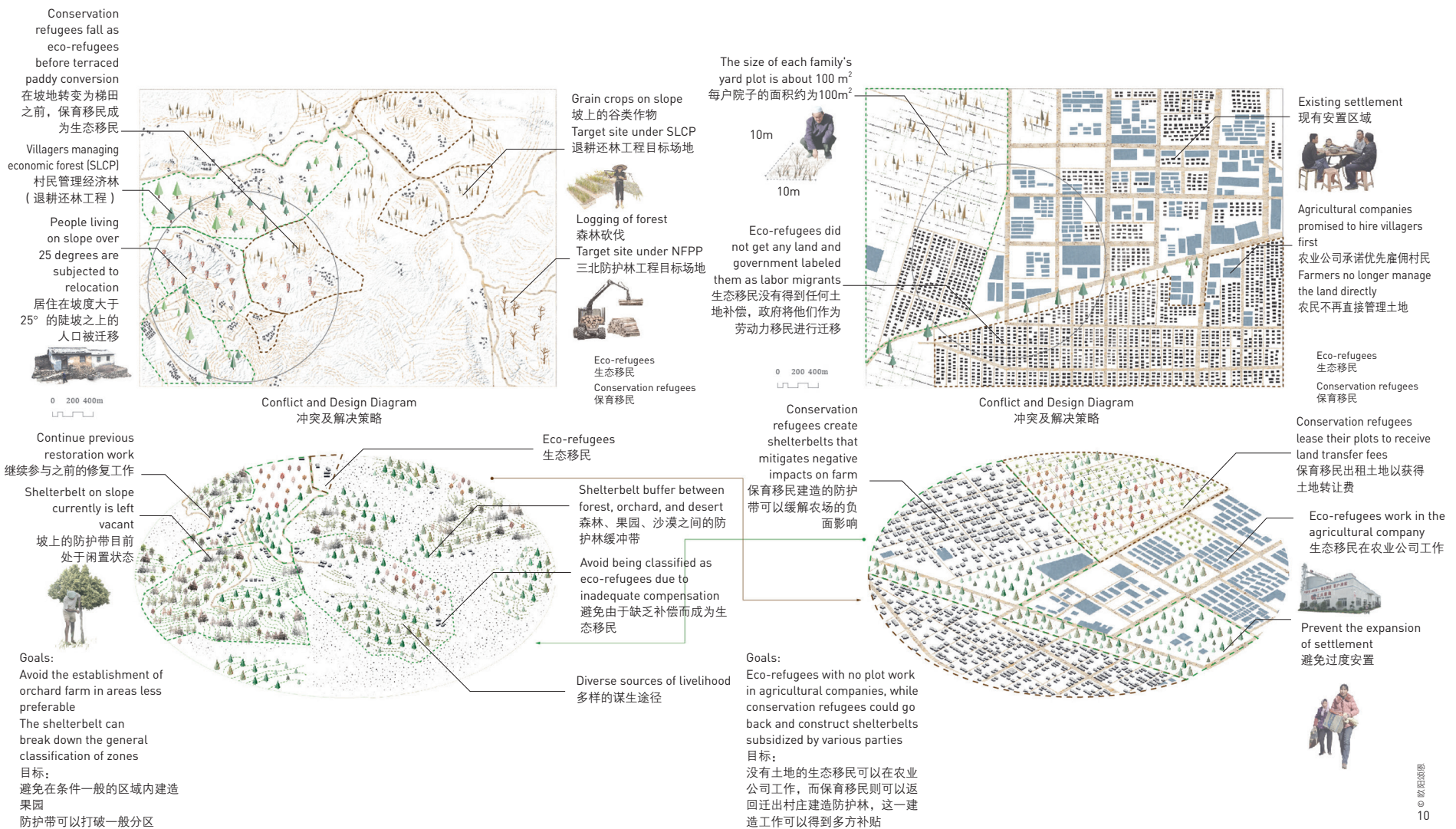
degree of changes to be applied to the site. For example, in Case 1, a cash crop belt will only be planted in area of demolished houses (Fig. 9). This decision is based on the consideration that people under CPGP should not return if their houses have been destroyed^[13]. The cash crop belt there is to ensure that migrants will not return, and to provide a new source of income for the local.

Site and landscape specificity are important factors to make decisions. Case 2 is the scenario when the conservation refugees migrate from the site first (Fig. 10). The conservation refugees are those managing the restoration measures, as inputs to improve agricultural productivity in the region. They should not have been asked to leave the origin under such a dogmatic approach. As a result, when they leave the place, the restoration

work is unattended. Furthermore, according to the research, eco-refugees should not do restoration work as it requires huge capital especially in deserted place.^[14] Therefore, the conservation refugees should go back to their origin to continue existing restoration work while creating more opportunities such as agricultural cooperatives for the eco-refugees in the destination to stay.

In the destination of Case 3, there is chaos over compensation and household registration (Fig. 11). Some of the settlers who have not been registered in the destination will not receive subsidy from any programs, while those who have resettled once may be subjected to resettlement again and be compensated again. The binary framework here is to help refugees better define themselves through specific landscape





features, so that allotment of resources will be clearer with less overlapping moments. It will also avoid people relocating over and over again due to confusing registration.

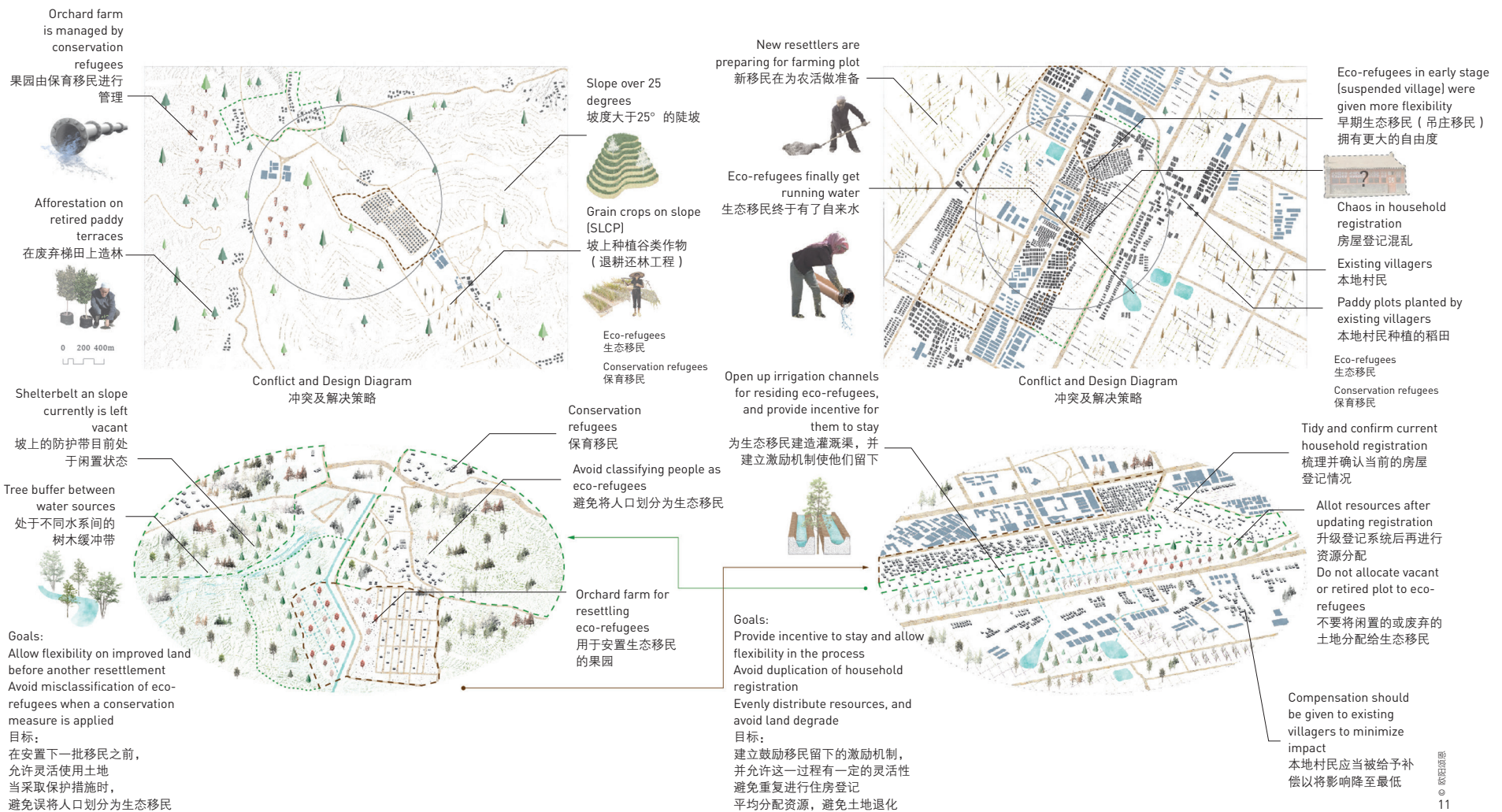
6 Conclusion

In conclusion, this research is to demonstrate some of the limitations of these large programs in the ecological modernization framework, and to argue for alternative ways of greening work of northwestern China. This paper suggests that insights from the conservation refugee and eco-refugee binary framework are more suited in helping understand why this is the case than ecological modernization. Ecological modernization

narratives take for granted both a crisis of ecological degradation, and the premise that the “greening” of the state will have environmental improvement as its primary outcome. A binary framework directs our attention to the distributive effects of resources and people. More importantly, it is a useful framework for analyzing and designing new programs, designed to review complex interaction and overlapping histories from these coexisting programs, and to make decision accordingly. This binary framework can avoid multiple treatment or ignorance to a certain group. **LAF**

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11

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