Framework for Cropland Repurposing: Objectives and Best Practices

Objectives

Socioenvironmental and economic justice in the land surrounding vulnerable communities

Justice and equity for vulnerable communities by addressing historical injustices, ensuring compliance with the legal standards for water security (quality, quantity, affordability, and accessibility), air quality, odors, pesticide exposure, dust exposure, nitrate leaching, extreme heat exposure, climate justice, and other local public health risks.

New socioeconomic opportunities for local businesses, for farmworkers that may lose their job due to loss of irrigated cropland, and for the local population through green economy and sustainable development. Opportunities informed by community priorities, aligning economic activities with the health of communities and ecosystems, and supporting local and circular economies with the objective of reducing poverty and increasing the local median household income.

Equitable access to land and natural resources for local residents by expanding climate change resilience infrastructure such as green spaces, trees for shade, community resilience centers, and recreational opportunities. Water security for all in rural and urban areas, including on-farm farmworker housing. Respect and uphold tribal sovereignty and self-determination over ancestral tribal lands and water resources for Indigenous Americans.

Ecological resilience and sustainability

Restoration and permanent conservation of native habitats to enhance ecosystem functions considering a holistic multispecies approach for landscape-scale habitat connectivity and to protect endangered species. Respect and support for Indigenous traditional ecological knowledge.

Green infrastructure around agricultural communities to improve water security while reducing agricultural dust, pesticides, malodor, and wildfire smoke. Protection against extreme climate events such as wildfire, floods from extreme precipitation and rapid snowmelt, droughts, and extreme heat.

Responsible and sustainable management of natural resources to fulfill present needs while ensuring future generations can also meet theirs.

Sustainable agriculture based on agroecology principles

Healthy, economically, and ecologically sustainable farming practices for farmers, farmworkers, the agricultural sector, and collective wellbeing based on agroecology and equity.

Fair agricultural leases and prevention of land speculation to minimize the economic impact on leasing farmers. Economic resilience especially for small and medium family farmers and for farmworkers that minimizes negative socioeconomic impacts of loss of irrigated cropland on them. Sustainable agricultural water footprint. Healthy soils that require less fertilizer.

Improved employment conditions, public health, and safety for farmworkers. Improved access to financial support, markets, and technical expertise. Culturally and environmentally appropriate agricultural activities.

Funding, scalability, and replicability

Funding sufficient to holistically implement land repurposing at the scales required for equitable land, water, and air security, and for a well-planned transition to a green economy that creates job safety and job security. Initiatives that scale up from local to regional levels while respecting local priorities.

Landowner engagement and broad participation in cropland repurposing to facilitate scaling up projects and spatial project continuity. Market forces balanced with planned changes to support farmers' sustainability and transition.

Democratic and equitable access to information to avoid lack of preparedness to this change that can harm small and medium farmers. Green economy and clean energy approaches that equitably improve local economies.

Leadership, accountability, and representation

Collective action coordinated across government institutions for effective change. Bottom-up leadership and guidance with involvement from all interested parties, not just land or water owners. Plurality and representation of local people's points of view in regional development plans. Grassroots groups that have the capacity to organize locally and advocate for community needs.

Non-extractive information exchange with low-income and other vulnerable groups. Robust data monitoring and proof of benefits. Compliance with current law, including pesticide application regulations, Clean Water Act, and labor laws. Reduction of poverty and higher local median household income. Energy resilience for the regions where the energy is generated. Agricultural economic models that account for negative externalities.

Multiple benefits to address other social needs

Food and nutrition security by fostering crop production for a healthy human diet and by reducing food loss and food waste, and local farmers' markets to facilitate food access. Equitable access to land and resources, especially in areas experiencing systemic inequities in food access. Stronger relationships between the general society, agricultural communities, and the environment to foster better land stewardship. Connection between society and the sources of their food so that people can broadly understand the dynamics of agricultural communities and environmental justice for sustainable land management.

Solutions for co-occurring public health issues, including mental health, physical exhaustion due to extreme climate conditions, malnutrition due to lack of food access, asthma, affordability and access to health care, and other common problems. Affordable housing that addresses specific local needs and culture. Educational opportunities for local residents to increase the labor market options and to promote more local businesses.

Green economy development around disadvantaged communities coordinated with and approved by the communities after a transparent process including trusted local grassroots and community-based organizations. Green economy projects that address local economic, social, and environmental priorities, without creating negative side effects including pollution, odors, noises, excessive traffic, and other problems.

Local food production. Reduction in food waste and food loss. Just land transition that reduces heat-trapping emissions, rectifies systemic injustices, and delivers equitable benefits.

Best Practices

Prioritize public health

Ensure water security, air quality, and climate justice

Repurpose cropland to ensure compliance with the legal standards or better for water security (quality, quantity, affordability, and accessibility), air quality, odors, pesticide exposure, dust exposure, nitrate leaching, extreme heat exposure, climate justice, and any other local public health risks.

Invest in fundamental and green infrastructure for justice and against extreme events

Develop fundamental infrastructure in underserved agricultural communities, including affordable drinking water, sewer systems, safe housing, health centers, community resilience centers, public transportation, parks, sidewalks, streetlights, broadband, education centers, and compost hubs. Create green infrastructure to reduce flood risk (e.g., from above-average precipitation to atmospheric rivers), drought effects, and exposure to extreme heat, including green areas, parks, trails, climate resilience centers, and community recreation areas. Promote climate change adaptation and mitigation strategies tailored to local conditions.

Promote safe agriculture around communities

If agriculture is maintained inside or around disadvantaged communities, it should be safe for residents to protect water and air security in revitalization belts (buffer zones) of about one mile around the communities, prohibiting the application of hazardous pesticides by aircraft (as it is forbidden in other countries) to dramatically increase health and environmental benefits and decrease public health costs for taxpayers.

Support food and nutrition security, and prevention of food waste and loss

Prevent hunger by making food available and promoting community gardens, especially in food deserts and areas affected by injustice in food access. Prevent food loss and food waste, promote recycling of all organic waste, and ensure food and nutrition security for agricultural workers.

Prioritize cropland repurposing in socioenvironmentally vulnerable locations

Protect and enhance disadvantaged communities and their surroundings

Promote a non-extractive green economy with diversified and community-led economic activities. Prevent the displacement of long-term residents after investments in cropland repurposing inside and around underserved regions and disadvantaged communities. Foster agroecology and polyculture for small family farms inside and around agricultural communities.

Repurpose agriculture in sensitive environmental areas

Restore historical floodplains, land adjacent to wetlands, riparian zones, and areas near forests or conservation lands such as municipal, state, or federal parks. Create wildlife corridors to enhance habitat connectivity through multispecies approaches and enhance habitat for pollinators. When possible, lands less suitable for agriculture but capable of providing similar environmental benefits should be prioritized for repurposing. Multibenefit aquifer recharge can be compatible with habitat restoration, public health, and groundwater sustainability.

Indigenous sovereignty and justice

Promote tribal sovereignty over ancestral tribal lands and water resources for traditional uses, for permanent environmental protection, and allowing Tribes to choose how to use those resources.

Transition agricultural practices for sustainability and strategic farming

Transition from single soil use to multiple soil uses and agroecological practices

Foster multibenefit agricultural projects that maximize the prioritized public benefits by transitioning from single land use to a mosaic of multipurpose beneficial land uses, such as cropland managed with agroecological principles or agrivoltaics. Invest to support farmers' efforts to adopt agroecological principles.

Support the transition of irrigated farmland to sustainable agricultural water use

Transition to dryland farming, including non-irrigated, non-intensive grazing for positive ecological outcomes and climate benefits, and to less water-intensive crops, including native seed production for habitat restoration and conservation. Foster planting of cover crops or conservation cover.

Address barriers to transitioning to less water-intensive crops and to agroecological systems in general, including market access, technical expertise, labor availability, and financial support.

Facilitate climate-smart transitions in agriculture to create climate resilience and economic robustness for small and medium farmers.

Incentivize the transition in agronomic practices

Promote low or no tillage to decrease dust emissions and other practices to improve soil health. Transition away from reliance on excessive fertilizer. Improve biodiversity and pollinator habitat on agricultural lands, for example with hedgerows or windbreaks. Encourage organic matter amendment application and mulching when possible.

Incentivize voluntary strategic farming plans

Help farmers plan their cropping options within a state farming plan that guides a shift in crop types to ensure food and nutrition security and to decrease economic risk for farmers while minimizing agricultural water use and accommodating climate-smart goals. Prioritize local food.

Foster a sustainable agricultural economy

Protect small and mid-size farmers

Incentivize equipment sharing among small farmers and other initiatives such as cooperatives to facilitate success for small and mid-size farmers. Identify revenue or saving sources like agrivoltaics or decentralized composting for small farmers. Prioritize and enhance water access for farmers practicing socially and environmentally beneficial methods. Protect small and medium family farmers from water and land consolidation.

Prioritize long-term social, environmental, and economic sustainability

Understand the best ways to widely implement long-term sustainable and profitable agriculture practices such as simultaneous land uses like agrivoltaics and agroforestry. Ensure land designated for these projects and practices is under secure tenure for long-term ecological and social benefits, and to avoid the displacement of small, disadvantaged farmers. Agricultural economic models should account for the negative externalities of agriculture to avoid unintended negative effects.

Identify how urban California can support rural regions and agriculture

Urban California can invest in headwater protection and their own food security. For example, cities can invest in watershed and forest management to protect the source of their water, and that helps prevent wildfires too.

Foster urban agriculture and more local access to food production everywhere in the United States to make the country's food system less dependent on California, allowing the cropland transition in California to be safe for everyone.

Advance equity and center community leadership

Ensure procedural and participatory equity

Develop plans and actions that reflect regional priorities, especially of the most underserved and underrepresented groups, and enforce current laws that protect people and the environment. Ensure that there is translation/interpretation of resources and materials, as well as multifaceted approaches to engaging with these plans and actions, such as public transit, childcare, and timing of the meetings. Encourage landowner participation through incentives and clear guidelines for land transfers/acquisition.

Incentivize diverse participation

Encourage representative involvement in land use planning and cropland transition implementation, including farmers, farmworkers, local businesses, environmental groups, and Indigenous communities. Draw on the expertise and experiences of those directly affected by land use decisions to devise robust, innovative, and locally relevant solutions that enhance economic stability, preserve local traditions, and ensure environmental sustainability, fostering a sense of shared responsibility and mutual benefit.

Develop equitable access to land, water, and natural resources

Facilitate access to land, water, and sustainable practices for small, beginning, and disadvantaged farmers incentivizing their use of agroecological practices. Pursue the models for land ownership and management that best facilitate public benefits. Use mechanisms like green bonds, land trusts, food commons, climate resilience districts, and other cooperative mechanisms.

Incentivize community led, clean economic development around disadvantaged communities

Communities should be part of the decisions related to new development around them. Weight of decisions should not be tied to acreage owned; instead, each affected person should have the same voting weight. Secure public and private funding for sustainability initiatives and to reward best practices.

Use non-extractive practices for information exchange

Information exchange should intentionally be non-extractive with low-income and other vulnerable groups. For example, if a community is asked to provide feedback about what kind of project they want to see around their community, they should also be provided with the necessary technical assistance and funding to develop a proposal for that project. When conducting outreach to explain a project, provide a meaningful tradeoff for their time. For example, if a community suffers from poor air quality, bring indoor air purifiers for the participants. Non-extractive outreach should be properly budgeted in multibenefit cropland repurposing projects.

Systems thinking

Understand interconnected systems and how changes to one element of a system can create ripple effects in other systems creating unintended consequences. Systems thinking helps to identify root causes of problems and to leverage the greatest positive impacts. Land use in California can be a massive driver for change, and both policies and funding sources can help that change in positive ways.

Pursue a just clean energy transition

Incentivize multibenefit energy solutions

Focus on incentivizing multibenefit energy solutions to optimize land use and support nearby communities, environmental efforts, and the clean energy transition. When considering land repurposing for solar projects, ecovoltaics should become the standard for new facilities to minimize the environmental impact of solar panels. Additional designs, such as agrivoltaic solar systems, should be considered for repurposing cropland.

Require community benefit agreements and transparency

Large clean energy projects should have binding community benefits agreements and follow a transparent flow of information between developers, and grassroots groups and residents from the beginning of the project assessment. Community benefits agreements negotiations should involve a broad representation of the community and can include stipulations such as workforce development programs, local labor requirements, local economic investments, environmental protections, and affordable housing. Any new project should ensure to do no harm to disadvantaged communities.

Ensure local energy security

Clean electricity generated near disadvantaged communities should be partially used to improve energy security in the region where it is generated.

Incentivize multiple uses of the infrastructure

Besides promoting multiple uses of the land, promoting multiple uses of the infrastructure can optimize budgets and reduce impacts. For example, ecovoltaic systems in aquifer recharge basins that create green infrastructure (a park or a sports field) near disadvantaged communities. For example, solar panels over irrigation canals can reduce evaporation in the canals while increasing the efficiency of the solar panels.

Expand skill-building, outreach, and access to information

Provide inclusive multigenerational education for grassroots leadership and workforce development

Provide multilingual, diverse, non-extractive, and culturally appropriate approaches to education and training. Education and outreach should encompass K-16 students and adults, and it should address the questions and concerns raised by local members. Foster leadership among community members and equip them with necessary skills. Facilitate workforce development and retraining opportunities for agricultural workers.

Data monitoring

The transition should be monitored for accountability purposes. In particular, encourage community monitoring of baseline and new conditions of air and water quality as different land repurposing strategies are implemented. Conducting community science for open-access environmental monitoring can empower participants and give agency to communities over their own data for local advocacy purposes.

Ensure fair compensation

Properly compensate those participants who contribute to the success of the plans and projects, especially to ensure representation from low-income participants. This can be achieved by compensating participants for childcare, mileage, and the time spent.