



global
environment
facility
INVESTING IN OUR PLANET

GEF/STAP/C.66/Inf.05
January 24, 2024

66th GEF Council Meeting
February 5 – 9, 2024
Washington D.C., USA

ALTERNATIVE LIVELIHOODS

Alternative Livelihoods

A STAP background note

January 2024

STAP

SCIENTIFIC AND TECHNICAL
ADVISORY PANEL

*An independent group of scientists that advises
the Global Environment Facility*



Alternative Livelihoods

A STAP background note

Table of Contents

1. Introduction	2
2. Alternative livelihoods defined and why they matter to the GEF	2
3. What the science says about AL interventions	3
3.1. Challenges to achieving AL outcomes	4
3.2. Attributes of successful AL interventions	5
3.3. Elements of good practice	6
4. Existing guidelines for AL interventions	8
5. GEF's experience with AL interventions.....	9
6. Conclusions	10
ANNEX 1: List of papers consulted.....	11
Annex 2: Synthesis of issues covered by a selected sample of existing guidelines and frameworks relating to alternative livelihood (AL) interventions.....	16
References	18

1. Introduction

Alternative livelihood (AL) interventions are often included in projects to mitigate environmental degradation deemed to be caused by current livelihoods. This approach assumes that current livelihoods can be shifted permanently away from environmentally destructive practices towards more environmentally sustainable alternatives. However, research literature suggests that permanent shifts are often difficult to achieve and evidence supporting the effectiveness of this approach is limited.

Over the past twenty years, reviews and analyses have highlighted limitations and challenges associated with AL interventions,¹ called for more deliberate and careful assessment of situations where AL interventions might be considered,² and proposed processes and steps to improve outcomes.³

This Scientific and Technical Advisory Panel (STAP) background note provides suggestions for the Global Environment Facility (GEF) to improve the chances of AL interventions achieving desired environmental outcomes. This work is based on a review of the scientific and technical literature, AL guidelines and frameworks, and a sampling of GEF-7 projects.

2. Alternative livelihoods defined and why they matter to the GEF

In locations where people's livelihoods are associated with environmental degradation,^{4,5} a possible mitigating solution is to encourage a shift towards alternatives with fewer negative impacts or greater environmental benefits.

ALs are one of several possible livelihood interventions (see Box 1). The term has been defined as interventions that aim to reduce the prevalence of livelihood activities deemed environmentally damaging by substituting them with lower impact activities with at least equivalent benefits for affected communities.⁶ An example would be to reduce hunting pressure on wild animals by introducing livelihoods based on activities such as ecotourism.

Alternative livelihood options have also been adopted to reduce people's vulnerability to climate change impacts. While these AL interventions deliver adaptation benefits, as opposed to environmental benefits, they encounter the same opportunities and challenges as AL interventions aimed at delivering GEBs.

However, ALs pursued as a lever to specifically achieve environmental outcomes is not yet backed by strong evidence,⁷ and questions remain about its effectiveness.⁸ Convincing people to change their livelihoods is complex, challenging, and often difficult to achieve at scale. In addition, AL intervention requires considerable support to establish and sustain; such support includes community acceptance and financial, technical, and material input from governments, communities, and the private sector.⁹

¹ For example, IMM (2008).

² For example, Roe et al. (2015), Wright et al. (2016).

³ For example, Ireland et al. (2004), IMM (2008), Pomeroy (2013).

⁴ Livelihood activities are often viewed as drivers of environmental degradation but the evidence for the connection between them and environmental degradation suggests that this relationship is highly contextual. And environmental degradation can also result in poorer livelihoods.

⁵ For example, IMM (2008).

⁶ See Roe et al. (2015).

⁷ For example, reviews by Roe et al. (2015), Wicander and Coad (2018), Stacey et al. (2021).

⁸ For example, a resolution adopted by the 2012 IUCN World Congress calling for a critical review of AL projects to obtain verifiable evidence of their effectiveness.

⁹ Pomeroy (2013).

Box 1: Common definitions for livelihood interventions

Most literature sources commonly reduce the term “livelihood” to “the capabilities, assets (including both material and social resources) and activities required for a means of living”¹⁰. However, the livelihoods literature recognizes that these activities also give meaning to people’s lives through social roles and responsibilities¹¹. The following definitions of different livelihood interventions are commonly used, although not universally accepted. For example, the term “alternative livelihoods” is often used, including in GEF projects, without clearly defining the intended scope or approach.

Alternative livelihood (AL) interventions: as noted in the literature, no universal definition of AL interventions exists¹². In the context of global environmental benefits (GEBs), they provide an approach to achieving conservation objectives by substituting livelihood strategies that harm the environment with environmentally friendly alternatives. This may involve providing an alternative resource to replace an exploited one, providing an alternative occupation or source of income, or encouraging an alternative resource extraction method with reduced environmental impact.

Enhanced livelihood interventions add value to ongoing traditional or historical livelihoods by employing strategies, such as engaging in activities that produce higher and more sustainable income streams, to move communities and stakeholders up the value chain. An example of such activities would be teaching beekeepers to process, package and market honey and related products as opposed to stopping at selling their raw honey wholesale to manufacturers¹³.

Supplemental and diversified livelihood interventions aim to reduce household dependence on a single livelihood. They can include elements of existing livelihoods combined with supplemental activities or strategies. The aim is to diversify income streams and livelihood opportunities and move away from environmentally destructive or unsustainable practices¹⁴.

Sustainable livelihoods cope with and recover well from different types of socio-economic and environmental stresses and shocks (e.g. drought, extreme weather events, sudden changes in food prices and other essential commodities) and maintain their capabilities and assets into the future without undermining the natural resource base¹⁵. Sustainability involves various dimensions, all of which are important to the sustainable livelihoods intervention approach. These include environmental sustainability, achieved by conserving or enhancing the productivity of life-supporting natural resources for future generations; economic sustainability, achieved by maintaining a given income level over time; social sustainability, achieved by minimizing social exclusion and maximizing social equity; and institutional sustainability, achieved by ensuring the capacity of prevailing structures and processes to perform their functions long term.

3. What the science says about AL interventions

Three relatively recent publications¹⁶ analyzed the effectiveness of AL interventions in achieving environmental benefits, collectively assessing outcomes for 281 projects from a wide range of donors and funding agencies.¹⁷ The evidence and findings from these studies provide a good basis for

¹⁰ Chambers and Conway (1991)

¹¹ For example: Bebbington (1999); Scoones (2009)

¹² Roe et al. (2015)

¹³ Pomeroy (2013)

¹⁴ Idem

¹⁵ Chambers and Conway (1991)

¹⁶ Roe et al. (2015), Wicander and Coad (2018) and Stacey et al. (2021).

¹⁷ These analyses include GEF projects but were designed to look at AL projects more generally and include projects from a variety of bilateral and multilateral donors.

identifying strengths and weaknesses in AL approaches; this was supplemented by a STAP review of 85 scientific papers¹⁸ on various aspects of ALs.

Few projects provided sufficient documentation to enable an evaluation of results and a determination of the project's effectiveness.¹⁹ For example, Roe and others²⁰ noted: "for many of the projects reviewed it was difficult to be conclusive about effectiveness; some projects operating in multiple sites were successful in some sites and not in others and there appears to be no robust way of predicting what might be the key causal factor." This lack of documentation and evaluation is compounded by a lack of long-term outcome monitoring.²¹ These findings underscore the need for a more systematic approach to AL intervention project design and implementation, and for better long-term monitoring, so that the link between project activities and outcomes can be evaluated.

3.1. Challenges to achieving AL outcomes.

The available evidence shows that AL interventions often do not achieve their intended environmental objectives. In an analysis of 106 projects, Roe and others found that fewer than 40% of AL interventions achieved the intended environmental outcomes. They also found little evidence linking benefits from AL intervention to changes in attitudes or behavior towards the environment. Further analyses concluded that links between livelihoods and conservation objectives were often unclear, or at best indirect.²²

Projects often underestimate the complexity of achieving changes in people's livelihoods²³ and make faulty assumptions about the environmental outcomes AL interventions²⁴ could produce. These assumptions include:

- That AL approaches will be adopted by the affected communities and will result in long-term livelihood changes. The literature suggests this is often not the case. AL strategies require a major shift away from traditional practices and behaviors²⁵, even more so than interventions that diversify or enhance livelihoods.²⁶ People may perceive ALs as too risky, particularly in vulnerable communities with high levels of poverty.²⁷ They may also perceive an AL as incapable of addressing their needs²⁸ in a way that brings lasting improvements to their quality of life.²⁹ AL approaches often focus on addressing material challenges to well-being and fail to recognize other factors that influence livelihood decisions, such as power dynamics in affected communities, issues of culture, meaning and identity associated with current livelihoods, and whether people have the autonomy to make changes to their livelihoods.³⁰
- That AL interventions will replace livelihood activities that harm the environment. Evidence suggests that this does not always happen. Instead, communities may choose to incorporate ALs into their existing sets of livelihoods if the alternatives do not provide the same economic benefits³¹ or they do not fit into an appropriate socio-cultural context. For example, Prescott and others³² conducted a study to reduce environmental damage from small-scale artisanal gold

¹⁸ STAP consulted 85 papers, mostly published after 2015, with a focus on those that provided insights into causes of success and failure of AL activities as well as recommendations for strengthening AL interventions (see Annex 1).

¹⁹ For example, Roe et al. (2015) identified 106 projects where AL was included but could only evaluate effectiveness in 21 due to lack of documentation of processes and outcomes. Wicander and Coad (2018) identified 155 projects but only 19 had sufficient information to assess outcomes.

²⁰ Roe et al. (2015)

²¹ For example, Roe et al. (2015) and Wicander and Coad (2018) found that information on the structure and results for most AL initiatives was not documented in a systematic and accessible manner to allow an analysis of effectiveness.

²² USAID (2018).

²³ For example, Ireland (2004), Carr (2013, 2019) and Bebbington (1999).

²⁴ Roe et al. (2015), Wright et al. (2015).

²⁵ Metternicht, G., Carr, E. and Stafford Smith, M. (2020).

²⁶ IMM (2008).

²⁷ Ireland et al (2004).

²⁸ For example, Chaigneau et al. (2019), Praptiwi et al. (2021) and Peng et al. (2022).

²⁹ See Carr (2019), Clemens and Demombynes (2010), Michelson and Tully (2018), Pronyk et al. (2012) and Wanjala and Muradian (2013).

³⁰ For example, Carr (2013, 2019).

³¹ For example, Cartier and Bürge (2011) and Prescott et al. (2020).

³² Prescott et al. (2020).

mining in Northern Myanmar. They found that: “mining and agriculture provided complementary livelihoods for many respondents as they met different livelihood needs” and “livelihood-based interventions based on agriculture/plantations—as currently planned by the regional government—are thus unlikely to provide true substitutes.” In such cases, alternative activities may be adopted by some people while others continue with their existing livelihoods.

- That AL will produce environmental benefits. AL interventions may not successfully displace harmful practices. Evidence suggests that “different kinds of participation in ecotourism could lead to contrasting impacts on natural resource use”³³ and that “while direct participation [in an AL project] might lead to decreased natural resource use (i.e. through creating economic time constraints), other forms of participation (i.e. selling goods and services to the ecotourism lodge) may not have the same effect. In some cases, income from ecotourism was invested in chainsaws, motorboats, and other equipment”,³⁴ which were then used to carry out more environmentally destructive activities such as logging, hunting or fishing.

3.2. Attributes of successful AL interventions

Studies indicate that AL interventions tend to be more successful when they include the following elements in their design or implementation: a multidimensional approach, equitable distribution of benefits, economic security and stability in income and employment, and clear logic for the intervention supported by a strong theory of change.

A multi-dimensional approach considers factors affecting people’s livelihood decisions (e.g. income size and reliability, food security, health and well-being, social status, and culture and values).³⁵ This goes beyond employment generation or economic rewards and includes cultural values and other social dimensions. Livelihood choices involve a wide range of factors and pressures related to social hierarchies and structures, cultural traditions, and meaning and identity—not just the material necessities of life.^{36,37} For example, in many coastal communities, livelihoods based on fishing represent a way of life not just a means to earn a living.

AL initiatives are more effective when they consider equitable distribution of benefits among all groups in the community.³⁸ Livelihood interventions can increase the resilience of affected communities³⁹ but can also produce negative outcomes⁴⁰ and diminishing impacts across different social and wealth categories⁴¹ if equitable benefit distribution is not considered. This can erode expected environmental outcomes.

The success and durability of AL interventions can be improved when projects provide economic security and stability, with higher rates of participation in project activities.⁴² More stable and secure incomes can also reduce the number of casual and seasonal workers engaged in environmentally destructive, polluting and hazardous practices (e.g. as can occur in artisanal gold mining).⁴³

³³ Roe et al. (2015).

³⁴ Idem. Pg 15

³⁵ Carr (2013, 2020) and Stacey et al. (2021).

³⁶ For example, Carr (2013, 2020), Praptiwi et al. (2021) and Natarajan et al. (2022).

³⁷ For example, Allison and Ellis (2001), Berkes et al. (2001), Carr (2013, 2019, 2020), Purcell and Pomeroy (2015) and Epstein et al. (2022).

³⁸ For example, Bennet et al. (2017), Gurney et al. (2021), Howson (2020) and Praptiwi et al. (2021).

³⁹ For example, Davies et al. (2013), Perez et al. (2015), Tanner et al. (2015), Martin and Lorenzen (2016), Carr (2019) and Epstein et al. (2022).

⁴⁰ For example, Katchova (2005) and Liao et al. (2015).

⁴¹ Zhao and Barry (2014).

⁴² For example, Chambers (1991), Walker et al. (2010), Haider et al. (2012), Hilson (2016), Wallner-Hahn et al. (2016), Carr (2020) and Prescott et al. (2020).

⁴³ For example, Cartier and Bürge (2011), Hilson (2016), Kumar et al. (2018) and Prescott et al. (2020).

3.3. Elements of good practice

STAP’s review of the academic literature and technical reports⁴⁴ identified the following elements of good practice within AL interventions:

- **Ensure that interventions are informed by a clear underlying logic with explicit pathways for achieving the desired outcomes in the project’s theory of change (TOC).** The context in which the project will be implemented should also be considered.⁴⁵ The TOC should test the soundness of assumptions that inform whether intervention options will or won’t work and why. The TOC should be revisited to adapt and respond to the changing needs and perceptions of target communities over time.⁴⁶ The framework outlined in Figure 1 sets out a logical sequence for considering some of the main assumptions inherent in AL interventions and understanding how the project is expected to deliver environmental benefits. Designing AL interventions using a TOC will facilitate more deliberate testing of the relationships between intermediate steps in the TOC (i.e. whether achieving one result necessarily produces an expected subsequent result).

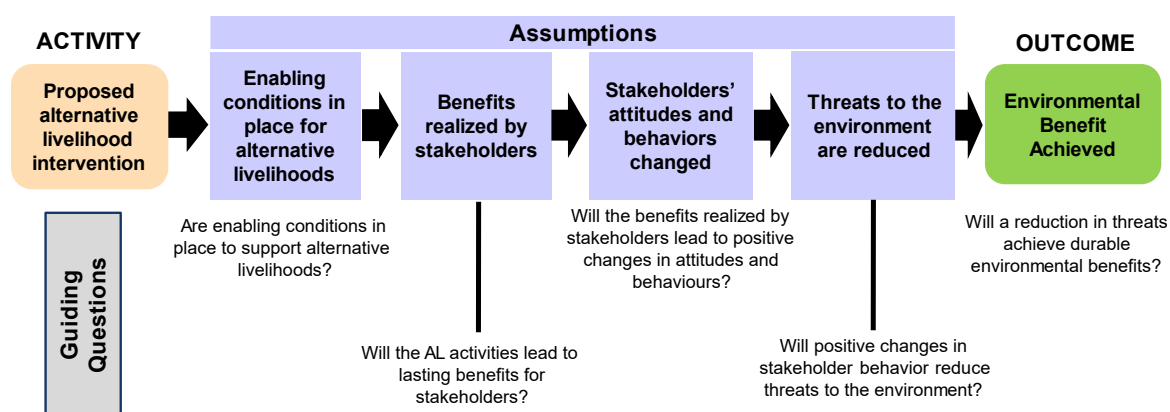


Figure 1: A framework for assessing a proposed alternative livelihood (AL) intervention maps out inbuilt assumptions and poses a series of questions to verify the assumptions. This figure was adapted from *Conservation Enterprises: Using a Theory of Change Approach to Examine Evidence for Biodiversity Conservation* (USAID 2016).

⁴⁴ For example, USAID (2016, 2017, 2018).

⁴⁵ This point comes across repeatedly in relation to AL. For example, Roe et al. (2015) and USAID (2017, 2018).

⁴⁶ For example, USAID (2018) and Carr (2019).

- **Identify and support enabling factors.** Success often depends on particular enabling factors (e.g. access to credit, development of markets, capacity building initiatives, and institutional or government support). Overcoming constraining factors is also essential. Table 1 presents some examples of enabling and constraining factors which will vary depending on the project and the specific local context.⁴⁷

Table 1: Factors affecting alternative livelihood interventions.⁴⁸

Enabling factors
<ul style="list-style-type: none"> • Establishing ownership of the process by local people by involving them in design, decision making and benefit sharing. • Implementing activities via reputable and respected local civil society organizations. • Facilitating engagement and ongoing involvement of local government agencies and educational institutions. • Employing local project facilitators for project design and implementation. • Adopting participatory capacity development methodologies (e.g. train-the-trainers). • Securing access to credit or capital (e.g. micro-credit, project grants) to purchase equipment and finance the new enterprise. • Linking with private sector value-chain actors. • Establishing strong institutions and institutional frameworks building upon existing structures and resources. • Establishing systems for learning and feedback.
Constraining factors
<ul style="list-style-type: none"> • Bureaucratic and legal hurdles undermining the proposed alternative livelihood (AL). • Inaccurate assumptions about the experience and knowledge of local actors and facilitators, leading to poor quality service delivery. • Misalignment with existing government policies, regulations and programs. • Proposed alternatives are too time consuming to be profitable. • Low capacity of local NGOs to manage the project and finances. • Technical challenges with a proposed AL intervention. • Insufficient labor inputs to support a proposed AL. • Failure to assess appropriateness and desirability of proposed AL livelihood activities, leading to poor uptake or lack of durable outcomes.

- **Co-design and co-implement AL interventions with local communities adopting new livelihoods.** Projects are more likely to succeed when local communities participate meaningfully in project design and planning and projects are developed within a local and national context.⁴⁹ To avoid reversion to previous livelihoods after intervention activities cease, projects should build local institutions and leadership capacity to ensure sustainability.
- **Assess the risks associated with AL interventions.** Risks to target communities include disruption to traditional livelihoods without providing a sustainable alternative.⁵⁰ Risks to the environment include participants re-investing income created by the intervention in environmentally damaging activities. Implementing risk assessment and management tools early in the process can help identify potential risks and effective mitigation measures.
- **Ensure that projects are locally relevant.** Market analyses can help establish the commercial and financial viability of alternative income-generating activities and their relevance to the

⁴⁷ USAID (2016).

⁴⁸ Sources: IMM (2008), USAID (2016) Stacey et al. (2021)

⁴⁹ See Roe et al. (2015) and Wicander and Coad (2018).

⁵⁰ For example, Ireland (2004).

local context and increase the likelihood of success. For example, cane rat rearing⁵¹ projects were successful in parts of West Africa where participants were already familiar with farming small animals.^{52,53}

- **Consider how projects could change existing sociocultural and political power structures.** Alternative income-generating activities can introduce new social and political power dynamics within local communities and upset pre-existing social structures and equilibriums. This is particularly true when new activities threaten the privileges of those in authority.⁵⁴ Equally, if marginalized social groups are excluded from the benefits and rewards of the changes introduced by AL interventions, they are much less likely to engage in the process and may even oppose or resent implementation.⁵⁵
- **Design projects at an appropriate scale and with sufficient time and resources to ensure an enduring transition to ALs.** The small-scale nature of many projects can reduce their impact.⁵⁶ Short-term project activities can impede durable outcomes⁵⁷ and may work against desired changes.⁵⁸ For example, a retrospective analysis of projects in six countries concluded that livelihood interventions required investment well beyond the typical project lifespan of three to five years to achieve sustainable conservation outcomes.⁵⁹ The literature suggests that appropriate project timelines are project specific and should ensure realistic timeframes for training, community uptake, and developing livelihood activities.
- **Effective monitoring and evaluation of outcomes and results.** Only a few of the reviewed projects implemented effective monitoring and evaluation (M&E) throughout the project lifetime as opposed to in its final phase. Long-term monitoring is prerequisite to understanding when, where, and why AL projects succeed or fail to achieve conservation outcomes. Such monitoring is also essential for sharing lessons and best practices.⁶⁰ An effective M&E system should be underpinned by robust baseline data and indicators that are tailored to capture results, including quantitative and qualitative measures of project outputs and outcomes⁶¹.

4. Existing guidelines for AL interventions

AL intervention guidance dates to at least 1999 when the UK Government's Department for International Development first released its sustainable livelihoods guidance sheets.⁶² These sheets include guidelines and tools for livelihoods analysis, market analysis, risk assessment, participatory methods and stakeholder analysis, and address many of the issues with AL intervention raised in the literature.

⁵¹ Cane rat farming involves rearing cane rats (also known as grasscutters) for meat, fur, traditional medicine and cultural benefits. Cane rat rearing has been promoted as an AL intervention to reduce wild meat hunting. For example, CBD (2011) and Wicander and Coad (2018).

⁵² Mini livestock includes many small animal species, both vertebrates and invertebrates (e.g. Guinea pigs, snails, frogs and insects), which can be raised in controlled conditions for subsistence or commercial purposes.

⁵³ Adedapo et al. (2013), Schulte-Herbrüggen et al. (2013) and Wicander and Coad (2018).

⁵⁴ For example, Carr (2020).

⁵⁵ For example, Stacey et al. (2021).

⁵⁶ Stacey et al. (2021).

⁵⁷ For example, Balmford and Whitten (2003), Blom et al. (2010), Wicander and Coad (2018) and USAID (2018).

⁵⁸ Carr (2020).

⁵⁹ The USAID (2018) report undertook a two-decade analysis of six sites in Guatemala, Philippines, Nepal and Uganda.

⁶⁰ Bottrill et al. (2011), Roe et al. (2015), Wicander and Coad (2018) and Stacey et al. (2021).

⁶¹ In the context of environment and development projects, including all AL interventions: **outputs** are the activities implemented to achieve the desired results; **outcomes** are the results of those activities which should result in benefits for specific individuals, groups of people, or communities; and **impacts** are the broader, longer-term effects of the results/outcomes.

⁶² DFID (1999).

STAP's review identified four documents from other sources that included specific emphasis on AL guidelines or frameworks.⁶³ A synthesis of this information (see Annex 2) shows that most guidance was developed for coastal and fishing livelihoods and focused on ensuring sustainable livelihoods outcomes.⁶⁴ Although these documents offer only limited guidance specific to achieving environmental benefits, the principles are nonetheless broadly applicable. For example, Ireland (2004) posed eleven questions to guide AL interventions, all of which dealt only with livelihood outcomes.

The main focus of the guidance from these sources was to “address challenges with ALs that often promote unsustainable solutions, that are poorly adapted to people’s capacities, have limited market appeal, and fail to reflect people’s aspirations for their future.”⁶⁵ These documents set out processes and tools for understanding the context in which projects would be implemented, identifying the drivers of livelihoods decisions and assessing different livelihoods options. The guidance, developed between 2004 and 2013, responds to many of the issues raised in the literature, including the importance of inclusive processes, the need for multidimensional approaches, and a greater appreciation of the role of culture, values, and other non-material factors in people’s livelihoods decisions.

What is missing from most guidance is how to ensure that AL interventions achieve intended environmental outcomes. The synthesis therefore includes a learning framework⁶⁶ based on the theory of change discussed in section 3.1 which can be used to identify and test the assumptions that underlie the use of AL approaches to achieve GEBs.

5. GEF's experience with AL interventions

STAP reviewed a sample of 42 full-sized GEF projects (30 Project Documents, and 12 Project Information Forms) which included AL to achieve global environmental benefits or climate adaptation benefits, in biodiversity (13 projects), land degradation (2) and climate change focal areas (5), as well as multifocal area projects (22).

The review focused on how well the projects reflected the AL elements of good practice in section 3.3. Well-designed projects⁶⁷ had a theory of change which addressed the AL components, and underlying assumptions, and referred to other elements of good practice.

Other projects with stronger AL components⁶⁸ acknowledged the complexities of AL interventions and or implemented continuous monitoring of performance and results to enable adaptive management and the application of corrective measures, if necessary.

Some projects included livelihoods analysis, value chain analysis and market development research together with community involvement to identify suitable AL interventions.

However, most project designs had under-developed AL components and did not incorporate many elements of good practice. And only two projects⁶⁹ referred to AL guidance.

⁶³ These documents refer either explicitly or by inference to AL and comprise: *Review of best practice and guidance on Alternative Sustainable Livelihoods for Coastal Communities* (Ireland et al., 2004); *IUCN Sustainable Livelihoods Enhancement and Diversification (SLED)* (IMM, 2008); *Sustainable Livelihoods and Ecosystem Approach to Fisheries Management* (Pomeroy, 2013); *Conservation Enterprises: Using a Theory of Change Approach to Examine Evidence for Biodiversity Conservation* (USAID, 2016).

⁶⁴ Ireland et al. (2004).

⁶⁵ IMM (2008) *IUCN Sustainable Livelihoods Enhancement and Diversification (SLED)*.

⁶⁶ USAID (2016).

⁶⁷ [GEF ID 10728](#) Investing in the Komodo Dragon and other globally threatened species in Flores; [GEF ID 10420](#) Promoting Sustainable Agricultural Production and Conservation of Key Biodiversity Species in the Dallol Bosso and Surrounding Areas; and [GEF ID 10287](#) Integrated management of Cameroon’s forest landscapes in the Congo Basin.

⁶⁸ [GEF ID 10532](#) Securing Long-Term Sustainability of Multi-functional Landscapes in Critical River Basins of the Philippines; [GEF ID 10696](#) Inclusive conservation of sea turtles and seagrass habitats in the north and north-west of Madagascar; [GEF ID 5671](#) Building shoreline resilience of Timor Leste to protect local communities and their livelihoods; [GEF ID 9129](#) Ecosystem Approach to Fisheries Management in Eastern Indonesia; [GEF ID 5226](#) Building the resilience and ability to adapt of women and children to changing climate in Democratic Republic of Congo.

⁶⁹ [GEF ID 10728](#) [GEF ID 10420](#) - see footnote 64

Project design could be improved by using STAP’s “Enabling Elements of Good Project Design”⁷⁰:

- Develop a TOC with explicit pathways for achieving outcomes and a good assessment of underlying assumptions.
- Engage more with stakeholders, particularly in co-designing projects.
- Conduct rigorous, project-specific risk analysis and implement robust mitigation measures for identified risks.
- Ensure that a project is appropriate and relevant for the target community.
- Incorporate lessons learned from previous or related projects.

6. Conclusions

STAP makes the following suggestions for improving the effectiveness of AL projects:

- Carefully assess whether ALs are the most appropriate intervention to deliver global environmental benefits in the specific context of the proposed project, noting the limitations and challenges of this approach.
- Develop a TOC with explicit pathways for achieving project outcomes through AL activities, including clearly identifying and testing assumptions to ensure that the proposed activities are likely to support livelihood and environmental objectives.
- Ensure that the project is fully understood and supported by local stakeholders.⁷¹
- Strengthen long-term monitoring and evaluation, both during the implementation of the project and after its conclusion, to improve the evidence base for whether AL approaches can deliver GEBs. M&E efforts should be focused on identifying and quantifying durable environmental benefits arising from any AL intervention.
- Design project timelines that are specific to the context of individual projects and provide long-term support. Many AL projects seek long-term behavior change, which may require more than a typical 3-to-5-year project duration to see impact. This may require longer term support to achieve intended outcomes, such as from local institutions or other partners or funding sources.⁷²

⁷⁰ Stafford Smith et al. (2021)

⁷¹ See Roe et al. (2015), Wright et al. (2015) and Wicander and Coad (2018).

⁷² An example would be to set-up a co-operative or similar association of producers (e.g. fishermen), which can be tasked with promoting AL activities and helping interested parties switch to less environmentally destructive livelihood activities.

ANNEX 1: List of papers consulted.

- Abbey, C E; Amankwah, R. & Nartey, R.S. & Al-Hassan, Sulemana. (2014). Direct smelting of gold concentrates, a safer alternative to mercury amalgamation in small-scale gold mining operations. *American International Journal of Research in Science, Technology, Engineering & Mathematic*. 5(2), December 2013-February 2014, pp. 174-179
- Allison EH, Ellis F (2001) The livelihoods approach and management of small-scale fisheries. *Marine Policy* 25(5):377–388
- Alvarez-Berrios, N. L., & Aide, T. M. (2015). Global demand for gold is another threat for tropical forests. *Environmental Research Letters*, 10, 014006.
- Asong, R., Mabunay, Ma., Aure, D., Seraspe, E., Braganza, R. and Corda, D. (2000) *Alternative Livelihoods in a Coastal Village from a Comparative Study of "Gendered Livelihoods Within Four Island Context: The Guimaras" Case*. Funded by the CIDA Island Sustainability Livelihood and Equity Programme.
- Bailey C and C Pomeroy (1996) Resource dependency and development options in coastal southeast Asia. *Society and Natural Resources* 9:191–9
- Balmford, A. and Whitten, T. (2003) Who Should Pay for Tropical Conservation, and How Could the Costs Be Met? *Oryx*, 37, 238-250. <http://dx.doi.org/10.1017/S0030605303000413>
- Ban Natalie C. et al., "Well-being outcomes of marine protected areas," *Nature Sustainability* 2, no. 6 (2019);
- Barreto Maria, L.; Patrick Schein; Jennifer Hinton; Felix Hruschka (2018) *The Impact of Small-Scale Mining Operations on Economies and Livelihoods in Low- to Middle-Income Countries*. East Africa Research Fund, DFID-UKaid, Alliance for Responsible Mining, Pact Global UK. London, UK.
- Bauch SC, Sills EO, Pattanayak SK. (2014) Have we managed to integrate conservation and development? ICDP impacts in the Brazilian Amazon. *World Development* 64 (supplement 1):S135–S148.
- Bennett Nathan J. et al., "Conservation social science: Understanding and integrating human dimensions to improve conservation," *Biological Conservation* 205 (1// 2017).
- Berkes F, Mahon R, McConney P, Pollnac R, Pomeroy R (2001) Managing small-scale fisheries, alternative directions and methods. International Development Research Center, Ottawa
- Blom, B., T. Sunderland, and D. Murdiyarto (2010) Getting REDD to work locally: lessons learned from integrated conservation and development projects. *Environmental Science and Policy* 13(2): 164–172.
- Borras Jr., S.M.B. (2009). Agrarian change and peasant studies: Changes, continuities and challenges – an introduction. *The Journal of Peasant Studies*, 36(1), 5-31.
- Brown K. (2003) Three challenges for a real people-centred conservation. *Glob. Ecol. Biogeogr.* 2003; 12:89–92.
- Brown, K. (2003). Innovations for conservation and development. *The Geographical Journal*, 168, 6–17.
- Carney, D. (1998) *Sustainable Rural Livelihoods: What Contribution Can We Make?* Department for International Development, London.
- Carr E. R. (2013) Livelihoods as Intimate Government: Reframing the logic of livelihoods for development, *Third World Quarterly*, 34:1, 77-108
- Carr E.R. (2019) Properties and projects: Reconciling resilience and transformation for adaptation and development. *World Development*, 122, pp. 70-84.
- Carr E.R. (2020) Resilient livelihoods in an era of global transformation. *Global Environmental Change*, 64 (2020) 102155
- Cartier, L. E., & Bürge, M. (2011). Agriculture and artisanal gold Mining in Sierra Leone: Alternatives or complements? *Journal of International Development*, 23, 1080–1099.
- Chaigneau, T.; Coulthard, S.; Brown, K.; Daw, T.M.; Schulte-Herbrüggen, B. (2019) Incorporating basic needs to reconcile poverty and ecosystem services. *Conserv. Biol.* 2019, 33, 655–664.
- Chambers, R., Conway, G. R. (1991). *Sustainable Rural Livelihoods: practical concepts for the 21st century* (IDS Discussion Paper No. 296). Brighton, UK.
- Chan Cheryl et al. (2019) "Examining linkages between ecosystem services and social wellbeing to improve governance for coastal conservation in Jamaica," *Ecosystem Services* 39 (2019).

- Clemens, M. A., & Demombynes, G. (2010) *When Does Rigorous Impact Evaluation Make a Difference? The Case of the Millennium Villages*. Working Paper 225. Washington, DC: Center for Global Development.
- Clements T, John A, Nielsen K, An D, Tan S, Milner-Gulland EJ. (2010) Payments for biodiversity conservation in the context of weak institutions: comparison of three programs from Cambodia. *Ecological Economics* 69:1283–1291.
- Colding, J., & Folke, C. (2001). Social taboos: “Invisible” Systems of Local Resource Management and Biological Conservation. *Ecological Applications*, 11, 584–600.
- Cook, C.N., M. Hockings, and R. Carter. 2010. Conservation in the dark? The information used to support management decisions. *Frontiers in Ecology and the Environment* 8(4): 181-186.
- Davies, M., Béné, C., Arnall, A., Tanner, T., Newsham, A., & Coirolo, C. (2013). Promoting resilient livelihoods through adaptive social protection: Lessons from 124 programmes in south Asia. *Development Policy Review*, 31(1), 27–58.
- DeWan A, Green K, Li X, Hayden D. (2013) Using social marketing tools to increase fuel-efficient adoption for conservation of the golden snub-nosed monkey, Gansu Province, China. *Conserv Evid*. 2013; 10:32–6.
- DFID (1999) *Key sheets for sustainable development: Overview*. London: Department for International Development.
- Epstein, G., Alexander, S. M., Marschke, M., Campbell, D., & Armitage, D. (2022) The ambiguous impacts of alternative livelihoods on fisher wellbeing in a closed access fish sanctuary in Port Antonio, Jamaica. *Coastal Studies & Society*, 1(1), 78–96.
- Fa, J.E. and D. Brown (2009) Impacts of hunting on mammals in African tropical moist forests: a review and synthesis. *Mammal Review* 39(4): 231–264.
- FAO (2012) The state of world fisheries and aquaculture. In: Fisheries and aquaculture department, Rome, Italy
- Fauna and Flora International (2013) *Why not “alternative livelihoods”? Conservation, Livelihoods and Governance Programme*. Cambridge: Fauna and Flora International.
- Ferraro PJ, Kiss A. (2002) Direct payments to conserve biodiversity. *Science* 298:1718–1719.
- Flores, M. (1999) Alternative Livelihood Development: A Strategy for Sustaining Coastal Resources Overseas. *Online Magazine for Sustainable Seas* October 1999 Vol 2. No. 10.
- Gurney G.G. et al. (2021) “Equity in environmental governance: perceived fairness of distributional justice principles in marine co-management,” *Environmental Science & Policy* 124 (2021);
- Haider, L. J., Quinlan, A. E., & Peterson, G. D. (2012) Interacting traps: resilience assessment of a pasture management system in northern Afghanistan. *Planning Theory & Practice*, 13(2), 312–319.
- Hilson, G. (2016) Farming, small-scale mining and rural livelihoods in sub-Saharan Africa: A critical overview. *The Extractive Industries and Society*, 3, 547–563.
- Hilson, G., & Banchirigah, S. M. (2009) Are alternative livelihood projects alleviating poverty in mining communities? Experiences from Ghana. *The Journal of Development Studies*, 45, 172–196.
- Howard, M. (2003) When Fishing Grounds are Closed Developing Alternative Livelihoods for Fishing Communities. *SPC Women in Fisheries Information Bulletin* # 13
- Howson, P. (2020) “Building trust and equity in marine conservation and fisheries supply chain management with blockchain”. *Marine Policy* 115 (2020).
- IMM (2008) *Sustainable Livelihoods Enhancement and Diversification (SLED): A Manual for Practitioners*. IUCN, Gland, Switzerland and Colombo, Sri Lanka; CORDIO, Kalmar, Sweden; and ICRAN, Cambridge, UK.
- Ireland, C., Malleret, D., & Baker, L. (2004) *Alternative Sustainable Livelihoods for Coastal Communities - A Review of experience and guide to best practice*. IUCN Eastern Africa Regional Programme, Nairobi, Kenya, i-viii + 48 pp.
- Jayaweera, I. (2010) *Livelihood and Diversification in Rural Coastal Communities*. Stockholm Resilience Centre.
- Kareiva, P. (2014) New conservation: setting the record straight and finding common ground. *Conservation Biology* 28:634–636.
- Katchova, A.L. (2005) The farm diversification discount. *Am. J. Agric. Econ.* 87 (4), 984–994.
- Keane, A., Jones, J. P. G., Edwards-Jones, G., & Milner-Gulland, E. J. (2008) The sleeping policeman: Understanding issues of enforcement and compliance in conservation. *Animal Conservation*, 11, 75–82.

- Keane, S., Bernaudat, L., Davis, K.J. *et al.* (2023). Mercury and artisanal and small-scale gold mining: Review of global use estimates and considerations for promoting mercury-free alternatives. *Ambio* **52**, 2023, 833–852
<https://doi.org/10.1007/s13280-023-01843-2>
- Kittinger JN, Finkbeiner EM, Ban NC, Broad K, Carr MH, Cinner JE, Gelcich S, Cornwell ML, Koehn JZ, Basurto X, Fujita R (2013) Emerging frontiers in social-ecological systems research for sustainability of small-scale fisheries. *Curr Opin Environ Sustain* 5(3–4):352–357
- Knight, A.T., R.M. Cowling, and B.M. Campbell. 2006. An operational model for implementing conservation action. *Conservation Biology* 20(2): 408–419.
- Kumar, A., Divoll, T. J., Ganguli, P. M., Trama, F. A., & Lamborg, C. H. (2018) Presence of artisanal gold mining predicts mercury bioaccumulation in five genera of bats (Chiroptera). *Environmental Pollution*, 236, 862–870.
- Liao, C., Barrett, C., Kassam, K.A. (2015) Does diversification improve livelihoods? Pastoral households in xinjiang, China. *Dev. Change* 46 (6), 1302–1330. <https://doi.org/10.1111/dech.12201>
- Mansfield D, Pain A. (2005) *Alternative livelihoods: substance or slogan?* Afghanistan Research and Evaluation Unit (AREA) Briefing Paper. Kabul, Afghanistan.
- Martin, A. (2017) *Just conservation: Biodiversity, wellbeing and sustainability*. Routledge.
- Martin, S.M., Lorenzen, K., 2016. Livelihood diversification in rural Laos. *World Dev.* 83, 231–243.
<https://doi.org/10.1016/j.worlddev.2016.01.018>.
- Michelson, H., & Tully, K. (2018) The millennium villages project and local land values: Using hedonic pricing methods to evaluate development projects. *World Development*, 101, 377–387.
- Miller TR, Minter BA, Malan L-C. 2011. The new conservation debate: the view from practical ethics. *Biological Conservation* 144:948–957.
- Milner-Gulland, EJ; Bennett, Elizabeth; Abernethy, Katharine; Bakarr, Mohamed; Bodmer, Richard; Brashares, Justin; Cowlishaw, Guy; Elkan, Paul; Eves, Heather; Fa, Julia; Peres, Carlos; Roberts, Callum; Robinson, John; Rowcliffe, Marcus; & Wilkie, David (2003) Wild meat: The bigger picture. *Trends in Ecology & Evolution*. 18. 351-357.
[https://doi.org/10.1016/S0169-5347\(03\)00123-X](https://doi.org/10.1016/S0169-5347(03)00123-X).
- Milner-Gulland E.J. *et al.* (2014) “Accounting for the impact of conservation on human well-being. *Conservation Biology* 28, no. 5;
- Mkuna, Eliaza & Baiyegunhi, Lloyd & Adamus, Wiktor (2020) Sustainable livelihood alternatives among Nile perch (*Lates niloticus*) fishers in Lake Victoria Tanzania: analytical hierarchy process (AHP) approach. *Journal of Economic Structures* (2020) 9:32 <https://doi.org/10.1186/s40008-020-00206-4>
- Mol, J. H., & Ouboter, P. E. (2003). Downstream effects of erosion from small-scale gold mining on the instream habitat and fish community of a small neotropical rainforest stream. *Conservation Biology*, 18, 201–214.
- Myanmar Centre for Responsible Business (2018) Sector-wide impact assessment of limestone, gold and tin mining in Myanmar. Myanmar centre for responsible business, Yangon, Myanmar. Available from <http://www.myanmar-responsiblebusiness.org/swia/mining.html>.
- Natarajan, Nithya & Newsham, Andrew & Rigg, Jonathan & Suhardiman, Diana. (2022) A Sustainable Livelihoods Framework for the 21st Century. *World Development*. 155.10.1016/j.worlddev.2022.105898.
- Noss AJ. (1997) Challenges to nature conservation with community development in central African forests. *Oryx* 31:180–188.
- Oates JF.1995. The dangers of conservation by rural development: a case-study from the forests of Nigeria. *Oryx* 29:115–122.
- Owusu, E. H., Ofori, B. Y., & Attuquayefio, D. K. (2018). The secondary impact of mining on primates and other medium to large mammals in forest reserves in southwestern Ghana. *The Extractive Industries and Society*, 5, 114–121.
- Peng, Robinson, Zheng, Li, Wang (2019). Telecoupled sustainable livelihoods in an era of rural–urban dynamics: the case of China. *Sustainability* 11 (9), 2716.
- Peng W., Brian E. Robinson, Hua Zheng, Cong Li, Fengchun Wang, Ruonan Li (2022). The limits of livelihood diversification and sustainable household well-being, evidence from China. *Environmental Development* 43 (2022) 100736.

- Perez, C., Jones, E. M., Kristjanson, P., Cramer, L., Thornton, P. K., Förch, W., & Barahona, C. (2015). How resilient are farming households and communities to a changing climate in Africa? A gender-based perspective. *Global Environmental Change*, 34, 95–107.
- Pomeroy, R. (2013) Sustainable Livelihoods and an Ecosystem Approach to Fisheries Management. Jakarta: Indonesia. The USAID Coral Triangle Support Partnership.
- Pomeroy R, Parks J, Mrakovcich KL, LaMonica C (2016) Drivers and impacts of fisheries scarcity, competition, and conflict on maritime security. *Mar Policy* 67:94–104
- Praptiwi, Radisti & Maharja, Carya & Fortnam, Matt & Chaigneau, Tomas & Evans, Louisa & Garniati, Leuserina & Sugardjito, Jito. (2021). Tourism-Based Alternative Livelihoods for Small Island Communities Transitioning towards a Blue Economy. *Sustainability*. 13. 6655. 10.3390/su13126655.
- Prescott GW, Maung AC, Aung Z, et al. (2020) Gold, farms and forests: Enforcement and alternative livelihoods are unlikely to disincentivize informal gold mining. *Conservation Science and Practice*. 2020; e142. <https://doi.org/10.1111/csp2.142>
- Pronyk, P. M., Muniz, M., Nemser, B., Somers, M. A., McClellan, L., Palm, C. A., Sachs, J. D. (2012). The effect of an integrated multisector model for achieving the Millennium Development Goals and improving child survival in rural sub-Saharan Africa: A non-randomised controlled assessment. *The Lancet*, 379 (9832), 2179–2188.
- Purcell SW, Pomeroy RS (2015) Driving small-scale fisheries in developing countries. *Front Mar Sci* 2:1–7
- Roe D. 2008. The origins and evolution of the conservation-poverty debate: a review of key literature, events and policy processes. *Oryx* 42:491–503.
- Roe, D., Booker, F., Day, M. *et al.* Are alternative livelihood projects effective at reducing local threats to specified elements of biodiversity and/or improving or maintaining the conservation status of those elements? *Environ Evid* 4, 22 (2015).
- Rostow, W. W. (1959). The stages of economic growth. *Economic History Review*, 12 (1), 1–16.
- Sachs, J. D., McArthur, J. W., Schmidt-Traub, G., Kruk, M., Bahadur, C., Faye, M., & McCord, G. (2004). Ending Africa's poverty trap. *Brookings Papers on Economic Activity*, 2004, 1.
- Sachs, J. D. (2005) *The end of poverty: Economic Possibilities for Our Time*. Penguin Press.
- Sachs, J. D., & McArthur, J. W. (2005) The millennium project: a plan for meeting the millennium development goals. *Lancet*, 365, 347–354.
- Salafsky N, Margoluis R, Redford K. (2001) *Adaptive management: a tool for conservation practitioners*. Biodiversity Support Program. Washington, D.C.
- Sallu, S. M., Twyman, C., & Stringer, L. C. (2010). Resilient or vulnerable livelihoods? Assessing livelihood dynamics and trajectories in rural Botswana. *Ecology and Society*, 15(4), 3–27.
- Scoones, I., 2009. Livelihoods perspectives and rural development. *J. Peasant Stud.* 36, 171–196.
- Scoones, I. (2015). Sustainable livelihoods and rural development. Rugby, UK: Practical Action Publishing.
- Schulte-Herbrüggen, B., G. Cowlshaw, K. Homewood, J.M. Rowcliffe (2013) The importance of bushmeat in the livelihoods of West African cash-crop farmers living in a faunally-depleted landscape. *PLoS ONE* 8(8): e72807.
- Seccatore, J., Veiga, M., Origliasso, C., Marin, T., & De Tomi, G. (2014). An estimation of the artisanal small-scale production of gold in the world. *Science of the Total Environment*, 496, 662—667.
- Sievanen L, Crawford B, Pollnac R, Lowe C. 2005. Weeding through assumptions of livelihood approaches in ICM: seaweed farming in the Philippines and Indonesia. *Ocean & Coastal Management* 48:297–313.
- Smith MD, Roheim CA, Crowder LB, Halpern BS, Turnipseed M, Anderson JL, Asche F, Bourillón L, Guttormsen AG, Khan A, Liguori LA, McNevin A, O'Connor MI, Squires D, Tyedmers P, Brownstein C, Carden K, Klinger DH, Sagarin R, Selkoe KA (2010) Sustainability and global seafood. *Science* 327(5967):784–786
- Sousa, R., Veiga, M., Van Zyl, D., Telmer, K., Spiegel, S., & Selder, J. (2011). Policies and regulations for Brazil's artisanal gold mining sector: Analysis and recommendations. *Journal of Cleaner Production*, 19, 742–750.
- Stacey N., Emily Gibson, Neil R. Loneragan, Carol Warren, Budy Wiryanan, Dedi S. Adhuri, Dirk J. Steenbergen, Ria Fitriana (2021) Developing sustainable small-scale fisheries livelihoods in Indonesia: Trends, enabling and constraining factors, and future opportunities. *Marine Policy*, Volume 132, 104654.

- Sutherland, W.J., A.S. Pullin, P.M. Dolman, and T.M. Knight. 2004. The need for evidence-based conservation. *Trends in Ecology and Evolution* 19(6): 305–308.
- Tanner, T., Lewis, D., Wrathall, D., Bronen, R., Craddock-Henry, N., Huq, S., Thomalla, F. (2015) Livelihood resilience in the face of climate change. *Nature Climate Change*, 5(1), 23–26.
- Taylor, M. (2015) *The political ecology of climate change adaptation*. Abingdon: Routledge.
- UNDP (2017) *Guidance note: Application of the sustainable livelihoods framework in development projects*. Panama City: United Nations Development Programme, Regional Centre for Latin America and the Caribbean.
- Van Vliet, N. (2011) *Livelihood alternatives for the unsustainable use of bushmeat*. Report prepared for the CBD Bushmeat Liaison Group. Technical Series No. 60. Montreal, Canada: Secretariat of the Convention on Biological Diversity.
- Veiga, M. M., Angeloci-Santos, G., & Meech, J. A. (2014) Review of barriers to reduce mercury use in artisanal gold mining. *The Extractive Industries and Society*, 14, 351–361.
- Walker, B., Gunderson, L., Kinzig, A., Folke, C., Carpenter, S., & Schultz, L. (2006). A handful of heuristics and some propositions for understanding resilience in social-ecological systems. *Ecology and Society*, 11(1).
- Walker, B., Sayer, J., Andrew, N. L., & Campbell, B. (2010). Should enhanced resilience be an objective of natural resource management research for developing countries? *Crop Science*, 50, S-10-S-19
- Wallner-Hahn, Sieglind & Molander, Fia & F., G. L. & Villasante, Sebastian & Eklöf, Johan & Jiddawi, Narriman & Torre-Castro, Maricela (2016). Destructive gear use in a tropical fishery: Institutional factors influencing the willingness and capacity to change. *Marine Policy*. 72. 10.1016/j.marpol.2016.07.001.
- Wanjala, B. M., & Muradian, R. (2013). Can big push interventions take small-scale farmers out of poverty? Insights from the sauri millennium village in kenya. *World Development*, 45, 147–160.
- Waylen KA, Fischer A, McGowan PJK, Milner-Gulland EJ. (2013) Deconstructing community for conservation: why simple assumptions are not sufficient. *Human Ecology* 41:575–585.
- Wicander S, Coad L. (2015) *Learning our lessons: a review of alternative livelihood projects in Central Africa*. ECI, University of Oxford, Oxford and IUCN, Gland.
- Wicander, S. Coad, L. (2018) Can the Provision of Alternative Livelihoods Reduce the Impact of Wild Meat Hunting in West and Central Africa? *Conservation and Society* 16(4): 441-458.
- Wright JH, Hill NA, Roe D, Rowcliffe JM, Kümpel NF, Day M, Booker F, Milner-Gulland EJ. (2015) Reframing the concept of alternative livelihoods. *Conservation Biology*, Volume 30, No. 1, 7–13.
- Zhao, J., Barry, P.J., (2014) Income diversification of rural households in China. *Canadian Journal of Agricultural Economics/Revue Canadienne D'Agroeconomie* 62 (3), 307–324. <https://doi.org/10.1111/cjag.12033>.

Annex 2: Synthesis of issues covered by a selected sample of existing guidelines and frameworks relating to alternative livelihood (AL) interventions.

Factors associated with successful AL interventions and elements of good practice	Guideline or framework document	Synthesis of relevant guidance
Understanding and planning for the complexity of AL interventions.	1, 2, 3, 4	All four documents provide guidance for dealing with the complexity of AL interventions. The learning framework in document (1) provides project developers with a structured process, relating to the theory of change, to plan AL interventions and to identify and test underlying assumptions. Documents (2), (3) and (4) provide more specific guidance for developing and implementing AL interventions. They recommend that AL interventions be designed around a series of phases and steps at different stages of project design and implementation. For example, (2) sets out a nine-step framework including analyzing stakeholders, conducting background research to understand the context and identify macro-economic issues, identifying vulnerabilities and external influences, identifying opportunities and leverage points, and assessing the viability of different options. Similarly, (3) maps out a process divided into three phases: the <i>discovery phase</i> , focusing on understanding the complexity of people’s livelihoods and their relationship with natural resources, the wider economy and society; the <i>direction phase</i> , which explores and analyzes the opportunities and options for livelihood strategies; and finally, the <i>doing phase</i> which focuses on developing people’s capabilities and adaptive capacity to support livelihoods interventions.
Taking a multi-dimensional approach to livelihood interventions.	2, 3, 4	Documents (2), (3), and (4) respond to the need for project design to identify different dimensions to people’s livelihoods and understand drivers and influencing factors. All three provide guidance based on the Sustainable Coastal Livelihoods framework (2), noting that project developers should consider the assets, influencing factors and the vulnerability context of the target community for AL interventions. These frameworks again emphasize the need for interventions to go beyond just the economic dimension of livelihoods, recognizing that a person will make choices based on multiple factors and that these choices in turn lead to physical actions and activities, which ultimately result in livelihood outcomes.
Designing an explicit pathway for AL outcomes in the project’s theory of change (TOC).	1, 3	Document (1) provides a direct approach and uses the TOC as a learning tool and framework to test assumptions inherent in AL approaches; it provides a stepwise analysis of assumptions and evidence. The other documents do not use the specific language of a TOC but do provide some useful guidance for issues that will strengthen the TOC. For example, document (3) provides guidelines for developing a vision for change, identifying pathways and entry points, building consensus around options, scoping opportunities and developing appropriate action plans to achieve the vision.
Identifying enabling factors.	1, 2, 3, 4	All four documents provide some guidance for identifying enabling factors or creating an enabling environment to support livelihood interventions. Two (1 and 4) identify some common enabling factors to help guide project design (e.g. access to credit and strong institutions), whereas (3) includes guidelines for creating the enabling conditions needed to support livelihood interventions and overcome constraints that hinder successful outcomes.

<p>Engaging meaningfully with stakeholders to: (i) co-design and co-implement interventions; (ii) ensure AL interventions are locally relevant; and (iii) consider how proposed AL strategies and interventions could change existing sociocultural and political power structures.</p>	<p>2, 3, 4</p>	<p>Documents (2), (3) and (4) build on the Sustainable Coastal Livelihoods framework, in which affected people or communities are central to the livelihoods analysis and planning process.</p> <p>The SLED framework (3) includes guidance for developing a shared understanding of the need for change and building consensus for change. This is based on the premise that consensus will enable people to take ownership of the change process and will inform and influence governments and other stakeholders regarding the need for livelihoods change and the roles that they can play in facilitating that change.</p> <p>Similarly, document (4) outlines a process to develop a livelihood options plan with affected communities and other stakeholders.</p>
<p>Assessing risks associated with AL interventions.</p>	<p>2, 3, 4</p>	<p>Documents (2), (3) and (4) outline processes designed to identify risks, make them clear to affected communities, and manage level of risk. These include using a mapping matrix to understand the potential impact and risks of different livelihood opportunities, scoping and validating livelihood opportunities, developing a livelihood options plan, and defining and assessing different pathways for livelihood interventions.</p>
<p>Monitoring effectively.</p>	<p>2, 3, 4</p>	<p>The importance of monitoring and feedback is outlined in three frameworks (2, 3 and 4) with an emphasis on adaptive learning and feedback during project implementation. This is regarded as an essential prerequisite to learning from successes and failures and implementing any necessary adjustments and improvements to the scope and focus of selected AL interventions.</p>

¹ *Conservation Enterprises: Using a Theory of Change Approach to Examine Evidence for Biodiversity Conservation (USAID, 2016)*

² *Alternative Sustainable Livelihoods for Coastal Communities, review of experience and guide to best practice (Ireland et al., 2004)*

³ *Sustainable Livelihoods Enhancement and Diversification (SLED)-a manual for practitioners (IMM, 2008)*

⁴ *Sustainable Livelihoods and an Ecosystem Approach to Fisheries Management (Pomeroy, 2013)*

References

- Adedapo, A.A., and Ogunjinmi, A.A. (2013). Economic aspects of grasscutter farming in southwest Nigeria: Implications for sustainable adoption and conservation. *International Journal of Scientific and Engineering Research*, 4(10), pp.17–23.
- Allison, E.H. and Ellis, F. (2001). The livelihoods approach and management of small-scale fisheries. *Marine Policy*, 25(5), pp.377–388.
- Balmford, A. and Whitten, T. (2003). Who should pay for tropical conservation, and how could the costs be met? *Oryx*, 37(2), pp.238–250.
- Bennett, Nathan J. et al. (2017). Conservation social science: Understanding and integrating human dimensions to improve conservation. *Biological Conservation*, 205, pp.93-108.
- Berkes, F. et al. (2001). *Managing small-scale fisheries: Alternative directions and methods* [online]. Ottawa: International Development Research Center. Available from: <https://idrc-crdd.ca/sites/default/files/openebooks/310-3/index.html> [accessed 6 January 2024].
- Blom, B., Sunderland, T. and Murdiyarto, D. (2010). Getting REDD to work locally: Lessons learned from integrated conservation and development projects. *Environmental Science and Policy*, 13(2), pp.164–172.
- Bottrill, M.C., Hockings, M. and Possingham, H.P. (2011). In pursuit of knowledge: Addressing barriers to effective conservation evaluation. *Ecology and Society*, 16(2), pp.14.
- Carr, E. R. (2013). Livelihoods as intimate government: Reframing the logic of livelihoods for development. *Third World Quarterly*, 34(1), pp.77-108.
- Carr, E.R. (2019). Properties and projects: Reconciling resilience and transformation for adaptation and development. *World Development*, 122, pp.70-84.
- Carr, E.R. (2020). Resilient livelihoods in an era of global transformation. *Global Environmental Change*, 64, pp.102155.
- Cartier, L. E. and Bürge, M. (2011). Agriculture and artisanal gold mining in Sierra Leone: Alternatives or complements? *Journal of International Development*, 23, pp.1080–1099.
- Chaigneau, T., Coulthard, S., Brown, K., Daw, T.M. and Schulte-Herbrüggen, B. (2019). Incorporating basic needs to reconcile poverty and ecosystem services. *Conservation Biology*, 33, pp.655–664.
- Chambers, R. and Conway, G.R. (1991). Sustainable rural livelihoods: Practical concepts for the 21st century (IDS Discussion Paper No. 296). Brighton, UK: Institute of Development Studies. Available from: <https://www.ids.ac.uk/download.php?file=files/Dp296.pdf> [accessed 6 January 2024].
- Clemens, M. A. and Demombynes, G. (2010). *When Does Rigorous Impact Evaluation Make a Difference? The Case of the Millennium Villages*. Working Paper 225. Washington, D.C.: Center for Global Development.
- Davies, M., Béné, C., Arnall, A., Tanner, T., Newsham, A. and Coirolo, C. (2013). Promoting resilient livelihoods through adaptive social protection: Lessons from 124 programmes in South Asia. *Development Policy Review*, 31(1), pp.27–58.
- Department for International Development (1999) *Sustainable livelihoods guidance sheets*. DFID, London. <https://www.livelihoodscentre.org/documents/114097690/114438878/Sustainable+livelihoods+guidance+sheets.pdf/594e5ea6-99a9-2a4e-f288-cbb4ae4bea8b?t=1569512091877> [accessed November, 2023].
- Epstein, G., Alexander, S.M., Marschke, M., Campbell, D. and Armitage, D. (2022). The ambiguous impacts of alternative livelihoods on fisher wellbeing in a closed access fish sanctuary in Port Antonio, Jamaica. *Coastal Studies and Society*, 1(1), pp.78–96.
- Gurney, G.G. et al. (2021). Equity in environmental governance: perceived fairness of distributional justice principles in marine co-management. *Environmental Science and Policy*, 124, pp.23-32.
- Haider, L.J., Quinlan, A.E. and Peterson, G.D. (2012). Interacting traps: Resilience assessment of a pasture management system in northern Afghanistan. *Planning Theory and Practice*, 13(2), pp.312–319.
- Herrero, M., Thornton, P.K., Gerber, P. and Reid, R.S. (2009). Livestock, livelihoods and the environment: Understanding the trade-offs. *Current Opinion in Environmental Sustainability*, 1(2), pp.111-120.

- Hilson, G. (2016). Farming, small-scale mining and rural livelihoods in Sub-Saharan Africa: A critical overview. *The Extractive Industries and Society*, 3(2), pp.547–563.
- Howson, P. (2020). “Building trust and equity in marine conservation and fisheries supply chain management with blockchain”. *Marine Policy*, 115, pp.103873.
- IMM Ltd. (2008). *Sustainable livelihoods enhancement and diversification (SLED): A manual for practitioners*. Gland, Switzerland, and Colombo, Sri Lanka: IUCN; Kalmar, Sweden: CORDIO; and Cambridge, UK: ICRAN. Available from: https://www.iucn.org/sites/default/files/import/downloads/sled_final_1.pdf [accessed 6 January 2024].
- Ireland, C., Malleret, D. and Baker, L. (2004). *Alternative sustainable livelihoods for coastal communities: A review of experience and guide to best practice*. Nairobi, Kenya: IUCN Eastern Africa Regional Programme.
- Katchova, A.L. (2005). The farm diversification discount. *American Journal of Agricultural Economics*, 87(4), pp.984–994.
- Kumar, A., Divoll, T.J., Ganguli, P.M., Trama, F.A. and Lamborg, C.H. (2018). Presence of artisanal gold mining predicts mercury bioaccumulation in five genera of bats (Chiroptera). *Environmental Pollution*, 236, pp.862–870.
- Liao, C., Barrett, C. and Kassam, K.A. (2015). Does diversification improve livelihoods? Pastoral households in Xinjiang, China. *Development and Change*, 46 (6), pp.1302–1330.
- Martin, S.M. and Lorenzen, K. (2016). Livelihood diversification in rural Laos. *World Development*, 83, pp.231–243.
- Metternicht, G., Carr, E. and Stafford Smith, M. (2020). *Why behavioral change matters to the GEF and what to do about it: A STAP advisory document*. Washington, D.C.: Scientific and Technical Advisory Panel to the Global Environment Facility.
- Michelson, H. and Tully, K. (2018). The millennium villages project and local land values: Using hedonic pricing methods to evaluate development projects. *World Development*, 101, pp.377–387.
- Natarajan, N., Newsham, A., Rigg, J. and Suhardiman, D. (2022). A sustainable livelihoods framework for the 21st century. *World Development*, 155, pp.105898.
- Peng, W., Robinson, B.E., Zheng, H., Li, C., Wang, F. and Li, R. (2022). The limits of livelihood diversification and sustainable household well-being, evidence from China. *Environmental Development*, 43, pp.100736.
- Perez, C., Jones, E. M., Kristjanson, P., Cramer, L., Thornton, P. K., Förch, W. and Barahona, C. (2015). How resilient are farming households and communities to a changing climate in Africa? A gender-based perspective. *Global Environmental Change*, 34, pp.95–107.
- Pomeroy, R. (2013). *Sustainable livelihoods and an ecosystem approach to fisheries management*. Jakarta, Indonesia: Coral Triangle Initiative on Coral Reefs, Fisheries and Food Security. Available from: https://www.coraltriangleinitiative.org/sites/default/files/resources/12_Sustainable%20Livelihoods%20and%20an%20Ecosystem%20Approach%20to%20Fisheries%20Management.pdf [accessed 6 January 2024].
- Praptiwi, R., Maharja, C., Fortnam, M., Chaigneau, T., Evans, L., Leuserina, G. and Sugardjito, J. (2021). Tourism-based alternative livelihoods for small island communities transitioning towards a blue economy. *Sustainability*, 13(12), pp.6655.
- Prescott, G.W. et al. (2020). Gold, farms and forests: Enforcement and alternative livelihoods are unlikely to disincentivize informal gold mining. *Conservation Science and Practice*, 2(3), e142.
- Pronyk, P.M., Muniz, M., Nemser, B., Somers, M.A., McClellan, L., Palm, C.A. and Sachs, J.D. (2012). The effect of an integrated multisector model for achieving the Millennium Development Goals and improving child survival in rural Sub-Saharan Africa: A non-randomised controlled assessment. *The Lancet*, 379(9832), pp.2179–2188.
- Purcell, S.W. and Pomeroy, R.S. (2015). Driving small-scale fisheries in developing countries. *Frontiers in Marine Science*, 2(44).
- Ratner, B.D. and Stafford Smith, M. (2020). *Multi-stakeholder dialogue for transformational change: A STAP advisory document*. Washington, D.C.: Scientific and Technical Advisory Panel to the Global Environment Facility.
- Ratner, B.D. (2022). *Risk appetite and the GEF: A STAP advisory document*. Washington, D.C.: Scientific and Technical Advisory Panel to the Global Environment Facility.
- Roe, D. et al. (2015). Are alternative livelihood projects effective at reducing local threats to specified elements of biodiversity and/or improving or maintaining the conservation status of those elements? *Environmental Evidence*, 4, 22.

- Schulte-Herbrüggen, B., Cowlshaw, G., Homewood, K. and Rowcliffe, J.M. (2013). The importance of bushmeat in the livelihoods of West African cash-crop farmers living in a faunally-depleted landscape. *PLoS ONE*, 8(8), e72807.
- Stacey, N., Gibson, E., Loneragan, N.R., Warren, C., Wiryawan, B., Adhuri, D.S., Steenbergen, D.J. and Fitriana, R. (2021). Developing sustainable small-scale fisheries livelihoods in Indonesia: Trends, enabling and constraining factors, and future opportunities. *Marine Policy*, 132, pp.104654.
- Stafford Smith, M. (2020). *Theory of change primer: A STAP advisory document*. Washington, D.C.: Scientific and Technical Advisory Panel to the Global Environment Facility.
- Stafford Smith, M., Ali, S., Carr, E.R., Donaldson, J., Metternicht, G., Ratner, B.D. and Bierbaum, R. (2021). *Enabling elements of good project design: A synthesis of STAP guidance for GEF project investment*. Washington, D.C.: Scientific and Technical Advisory Panel to the Global Environment Facility.
- Stafford Smith, M., Ratner, B.D., Metternicht, G., Carr, E.R., Bierbaum, R. and Whaley, C. (2022). *Achieving transformation through GEF investments: A STAP advisory document*. Washington, D.C.: Scientific and Technical Advisory Panel to the Global Environment Facility.
- Tanner, T., Lewis, D., Wrathall, D., Bronen, R., Cradock-Henry, N., Huq, S. and Thomalla, F. (2015). Livelihood resilience in the face of climate change. *Nature Climate Change*, 5(1), pp.23–26.
- USAID. (2016). *Conservation enterprises: Using a theory of change approach to examine evidence for biodiversity conservation*. Washington, D.C.: USAID Office of Forestry and Biodiversity.
- USAID. (2017). *Integrating livelihood and conservation goals: A retrospective analysis of World Bank projects*. Washington, D.C.: U.S. Agency for International Development.
- USAID. (2018). *The Nature of Conservation Enterprises: A 20-year retrospective evaluation of the theory of change behind this widely used approach to biodiversity conservation*. Washington, D.C.: U.S. Agency for International Development.
- Walker, B., Sayer, J., Andrew, N. L., and Campbell, B. (2010). Should enhanced resilience be an objective of natural resource management research for developing countries? *Crop Science*, 50, pp.S-10-S-19.
- Wallner-Hahn, S., Molander, F., Gallardo, G., Villasante, S., Eklöf, J.S., Jiddawi, N.S., de la Torre-Castro, M. (2016). Destructive gear use in a tropical fishery: Institutional factors influencing the willingness and capacity to change. *Marine Policy*, 72, pp.199-210.
- Wanjala, B.M. and Muradian, R. (2013). Can big push interventions take small-scale farmers out of poverty? Insights from the Sauri millennium village in Kenya. *World Development*, 45, pp.147–160.
- Wicander, S. and Coad, L. (2018). Can the Provision of Alternative Livelihoods Reduce the Impact of Wild Meat Hunting in West and Central Africa? *Conservation and Society*, 16(4), pp.441-458.
- Zhao, J. and Barry, P.J. (2014). Income diversification of rural households in China. *Canadian Journal of Agricultural Economics/Revue Canadienne D'Agroeconomie*, 62(3), pp.307–324.