Ecosystem Approach Working Group 3

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Zoe Kemp – Operations Manager - Scottish Natural Heritage

Stirling Ecosystem Approach Demonstration Project

Draft project outline - Work in progress…

Project Objectives:

- Identify priority actions within the Project area to deliver improved benefits from nature in a way that integrates public policy objectives and local perspectives;
- Demonstrate the benefits of applying an ecosystems approach to land use, and a way of doing this that is practical and realistic.

Project key steps:

- identify key stakeholders who benefit from and manage the environment in the area, including land managers, local communities, visitors and interest groups;
- identify and map the baseline ecosystem (landscape, land use and habitats);
- identify the public policy objectives that influence management or delivery of ecosystem services;
- identify the benefits (ecosystem services) which people receive from the environment using local as well as scientific knowledge;
- work with local stakeholders to value or prioritise the ecosystem services;
- assess the current capacity of the natural environment to support and deliver ecosystem services in the area, identifying barriers to delivery;
- present options for change and future scenarios, including the implications for ecosystem services, at various scales;
- work with local stakeholders to assess and elicit preferences for the scenarios, including assessment of trade-offs and synergies;
- identify the mechanisms, opportunities and barriers to delivering the preferred scenarios; and
- evaluate the success of the Project.

Preferred approach

Introduction

1.1 This section of the report maps out a preferred approach for the Stirling Ecosystems Approach Demonstration Project.

Approach

1.2 The study should base the inclusion of ecosystem services on the characteristics of the study area. An initial scoping exercise would identify the principal ecosystems (including land uses) and the main ecosystem services associated with these (high, medium, low, none).

1.3 The study should differentiate between the supply of services from within the study area, and the consumption, or demand for services that may occur within, or outwith the study area. It may be necessary to distinguish between beneficiaries of ecosystem services at local, strategic and global scales, and between services which are currently provided or have potential to be provided given certain actions or interventions.

1.4 Consideration should be given to the separate identification of socio-economic benefits flowing from ecosystem services.

Data and analysis

1.5 Once the range of relevant ecosystem services has been identified, metadata should be analysed to determine which areas have good information, which areas have data deficiencies, and which areas lack information altogether. An assessment at this stage will need to consider how significant such gaps and deficiencies are, whether they can be addressed through qualitative or proxy data, or whether new survey information is required. From an initial assessment of data for the area, we anticipate that there will be data gaps and issues particularly in relation to:

- the function and health of ecosystems providing services;
- the regulating effects of ecosystems at the macro scale (i.e. beyond individual point monitoring data);
- effectively measuring, or developing proxies for, more nebulous cultural and spiritual responses;
- the ability of data to be incorporated within Bayesian belief networks for modelling purposes; and,
- the ability of metrics to contribute to valuation of ecosystem services.

1.6 The decision to carry out new survey work should be evaluated in terms of the significance of the data gap, the time, cost and replicability of any survey work.

1.7 Network analysis should be used to explore the linkages from different ecosystems and land uses to ecosystem services and socio-economic benefits. This should consider the strength and significance of different links. This type of analysis could be used to analyse the influence of different policy drivers, land management activities or other ‘pressures’ affecting ecosystems in the study area.

1.8 GIS analysis should be used to explore the spatial patterns associated with the supply of different ecosystem services. Assumptions and scoring classifications will be needed to guide this process.

1.9 Depending on the time horizon for the project, climate change projections should be factored into the analysis of ecosystem services.

1.10 It may be appropriate to carry out some quantification and valuation of a limited number of ecosystem services – principally in terms of provisioning services.

1.11 Scenarios should be used to explore different land use policy emphases. These should be defined in discussion with stakeholders, but should focus around key areas where policy intervention could have an influence in the future. These could include the influence of national policy drivers such as those outlined in **Section 3**, including policies to mitigate and adapt to climate change, promote integrated land management, improve water quality, or address flood risk, together with broader initiatives such as the Central Scotland Green Network which embrace many of these objectives in an integrated way.Scenarios could also be used to explore options less constrained by existing policies, and should provide an opportunity for local stakeholders to contribute to the definition of possible futures.

1.12 A number of scenarios would then be worked up with illustrative maps and graphics to show what they might mean for the study area. For example, if the focus of a scenario was on woodland expansion, the aim would be to illustrate the type, form and location of new woodlands in line with relevant forestry and woodland frameworks. If the focus was on sustainable flood management, it might highlight areas of moorland restoration, the recreation of natural floodplains and areas of new woodland planting. The illustrative nature of these scenarios would need to be emphasised to avoid giving the impression that measures were being imposed on land owners and managers. Stakeholder discussions would provide an opportunity to identify more 'concrete' options, but the emphasis would probably need to remain on the types and broad locations of different actions, unless key land owners and managers were present and in agreement.

1.13 Working with stakeholders, each scenario would be evaluated in terms of the like effect on the provision of ecosystem services when compared with the existing baseline. This would identify those services which would increase, remain unchanged or decrease under the scenario in question. The discussion would then move on to consider how negative effects could be reduced and benefits increased, exploring opportunities for multi-benefit solutions as well as the potential need to balance benefits in one area with disbenefits in others. Work on individual scenarios would be used to inform the development of an integrated vision for the area, designed to limit trade-offs and maximise synergies.

1.14 Broader projections and socio-economic scenarios should be used to sensitivity test the provision of ecosystem services (baseline+climate change) and each of the scenarios (scenario+climate change+socio-economic scenarios). This should be a qualitative analysis, producing a commentary, rather than a more detailed and quantitative assessment. This would help determine the extent to which the findings of the project could be affected by changes in the way that society, its economy and political systems develop in the future.

Engagement

1.15 The study should adopt a collaborative approach to the way that stakeholders are involved in the study. Different types of stakeholder should be identified, and an engagement strategy developed for each.

1.16 Potential groups could include policy and decision makers (e.g. agency and local authority officers), front-line deliverers (e.g. area staff, rangers, NNR managers etc), land managers (agriculture, woodland, moorland), study area residents and external visitors and consumers of ecosystem services. Building on the findings from the review, these stakeholder groups could be defined as comprising:

- Policy and decision makers, together with front-line deliverers, should be identified in discussion with the project partners;
- Land managers should be identified with the involvement of NFUS and SCPBA, and through existing community networks and organisations;
- Local residents should be identified through existing community networks and organisations. This group should include local non-land based businesses, particularly those with an involvement in recreation and tourism;
- Key visitor and recreation sites should be used to reach visitors to the area;
- We propose that external beneficiaries of ecosystem services should be represented by policy and decision makers.

1.17 Lists of stakeholders to engage with can be compiled with the assistance of local access officers, community learning and development officers, community planning officers and local Community Trusts as well as other 'front line staff'. We would note that Community Trusts in the area that have compiled their own Action Plans will have as part of that process held up to 20 stakeholder meetings with a range of interests including landmanagers, recreation users, tourism businesses, environmental groups, heritage groups and outdoor recreation groups.

1.18 The key principle should be to convene a number of focus group meetings in the study area that relate to the steps in the ecosystems approach. There is a question about whether these should be:

- Separate focus groups for the different stakeholders leading to joint meetings of different stakeholders once initial separate meetings had been held;
- Multi stakeholder focus groups that work collectively from the start to work through the process together.

1.19 On balance, **our recommendation would be to use multi stakeholder focus groups from the start as this would be most likely to build collaborative working and joint understanding**.

1.20 There are not, as far as we can identify, any unifying networks or forums for the Carse area – despite the commonality of the landscape and heritage – and this work would be an opportunity to create a forum that may have a future resonance and purpose for the collective and integrated management of the area. This potential emerged in previously work in the Carse of Gowrie (LUC and STAR, 2011, for Perth and Kinross Council and Adaptation Scotland) with a number of disparate communities and interests realising the opportunity that might come from working together at this 'landscape scale'.

1.21 Joint focus group meetings should aim to have around 30 people attending a series of meetings to work through the process. This should involve representatives from the different stakeholder groups that also reflected a spread of communities, age groups and gender within the study area.

1.22 The focus group approach could be complemented by web-based support that enables input from other stakeholder interests from outwith the area. It may be possible to develop some of these additional methods following discussion with the locally convened focus groups – thereby involving the stakeholders in expanding the engagement process themselves.

1.23 An early task should the development of a vocabulary more suited to engagement with communities, land managers and other stakeholders within the study area. A key objective should be to demonstrate the relevance of the work to each of the

stakeholder groups. The involvement of non-agency stakeholders should be recognised in the status afforded to the stakeholder group (e.g. reference to 'Future landscapes panel' or similar), provision for a limited amount of catering (e.g. soup and sandwiches) ahead of each meeting, and either rewards such as book tokens or a raffle of local produce.

1.24 Stakeholders should be involved in defining the study area, confirming and evaluating the provision of ecosystem services, helping to fill gaps where baseline data is deficient, helping to define the range of policy and land management scenarios included in the study, in the evaluation of these scenarios and discussions about the key trade-offs and land management policy decisions relating to the area.

1.25 There are opportunities to build additional qualitative data collection – particularly in relation to social values of ecosystems – into any programme of consultation. However, a clear understanding of the potential value added from these metrics should be established to determine whether the costs involved will be met by quality and usefulness of data returned.

1.26 The process should be mindful of the opportunities for action research arising out of the stakeholder engagement process. This emerged as a potential outcome from the Carse of Gowrie study and would need to be supported. The involvement of 'front line delivery' stakeholders will assist in making this connection. There may also be an expectation for continued involvement and support of agencies in delivering the desired outcomes identified by the project.

1.27 While the aim should be to develop consensus, it is possible that this will not be achieved fully and that policy development will need to be informed by rather than being driven by the process of stakeholder engagement.

Preliminary project process

1.28 This section maps out a proposed process for the Stirling demonstration project, indicating how the technical and stakeholder components of the work will be combined. The process is based around five meetings of a stakeholder group over a period of six or more months. Key steps in the process would comprise:

- Preparation
- Recruiting stakeholders
- Stakeholder Meeting 1 : **Land uses and benefits**
- Analysis between Stakeholder Meetings 1 and 2
- Stakeholder Meeting 2: **Current benefits and beneficiaries**
- Analysis between Stakeholder Meetings 2 and 3
- Stakeholder Meeting 3: **Winds of change**
- Analysis between Stakeholder Meetings 3 and 4
- Stakeholder Meeting 4: **Scenarios**
- Analysis between Stakeholder Meetings 4 and 5
- Stakeholder Meeting 5: **Action!**
- Analysis and reporting after Stakeholder Meeting 5
- Final presentation meeting

1.29 Each of these steps is described below.

Preparation

1.30 The preparatory phase of the project would comprise four main groups of tasks:

- **Client partnership and appointment of project team**
  - Establish project partnership and steering group
  - Confirm aims, objectives and key outcomes from the study
  - Preparation of study brief,identification, appointment and tasking of project team
- **Preliminary technical analysis**
  - Mapping of preliminary study area;
  - Preliminary identification / scoping of key ecosystems, functions, services – mapping and network analysis;
  - Preliminary analysis of the current or potential influence of key policy drivers and land management activities on ecosystems;
  - Data review and preliminary mapping against scoped ES;

- Evaluation of potential gaps or inadequacies in baseline information and prioritise areas for additional qualitative and quantitative data collection.

- **Communications and stakeholder engagement process design**
  - Communications strategy – agreeing non-technical terminology and descriptions for scoped ES, publicity methods, distribution of interim and study findings, role of Scotland Environment Web;
  - Identification of stakeholders informed by understanding of the area, policy drivers and key issues;
  - Invitation and follow up, using existing community, land management, business and policy networks as appropriate wherever possible.

- **Evaluation**
  - Review and evaluate preparation stage, including agreement of project partners around methodology and identification of stakeholders.

Recruiting stakeholders

1.31 It is likely that a number of different routes will be used to identify and recruit stakeholders to participate in the study. This will distinguish between the following types of stakeholder:

- **Policy and decision makers**, together with front-line deliverers, should be identified in discussion with the project partners;
- **Land managers** should be identified with the involvement of NFUS and SCPBA, and through existing community networks and organisations;
- **Local residents** should be identified through existing community networks and organisations. This group should include local non-land based businesses, particularly those with an involvement in recreation and tourism. The aim should be to secure the involvement of a good cross section of local people, based on factors such as gender, age, income, occupation and interest;
- Key visitor and recreation sites should be used to reach **visitors** to the area. Local recreation user groups should also be involved.

1.32 We propose that other external beneficiaries of ecosystem services should be represented by policy and decision makers.

1.33 As noted above, we recommend that a number of ‘incentives’ are used to encourage the engagement of non-agency participants. This should include:

- Giving the stakeholder group a title such as a ‘panel’ or ‘advisory group’ to emphasise its status and importance in influencing the way the study area is managed in the future (the rest of this section refers to the ‘stakeholder panel’);
- Acknowledging participation in the form of book tokens or other form of reward;
- Offering to covering travelling expenses incurred in attending meetings;
- Providing soup and sandwich catering before each meeting to allow people to come straight from work, and to provide a time for informal discussion and capacity building.

1.34 Invitations to join the stakeholder panel should cover the following:

- Introduction to the study;
- Why it's being carried out;
- What the outcomes will be;
- Why we want people's involvement;
- The geographic area that will be covered;
- Details of meetings (when and where);
- Contacts and links to further information (Scotland Environment Web / project website).

1.35 The take-up of invitations should be monitored closely and additional effort applied where there appears to be under-representation of particular groups or segments of the population.

Stakeholder Meeting 1 : Land uses and benefits

1.36 The first stakeholder panel meeting would focus on exploring the range of ecosystems and land uses present within the study area, and working with stakeholders to identify the benefits that they provide. The meeting would be divided into four main steps:

- **Introduction and welcome**
  - A short, non-technical introduction to the project, its anticipated outcomes, the role of the stakeholder panel, and the programme of panel meetings, round the room introductions.
- **The study area, its land uses and benefits it provides**
  - A short review of the study area and its boundaries, to ensure it reflects local stakeholders' views on a logical and definable area;
  - A discussion about the land uses present within the study area. This would be informed by mapped information on land cover and land use;
  - An unstructured discussion at table level about the reasons why the area is important to stakeholders.
- **Introduction to a benefits based approach**
  - Introduction to the idea of land uses / ecosystems, services and socio-economic benefits
  - Benefit mapping – the relevant ecosystem services would be divided up and allocated to different tables. Each would be asked to rank the list of services in terms of those they consider most significant, and then to map which parts of the study area are most important in providing the service in question. The discussion would be supported by mapped information on recreation provision, woodland cover, cultural heritage, habitats, watercourses and flood risk etc. Information would be recorded on a series of blank base maps. Completed maps could be pinned up for inspection at the end of the meeting.
- **Conclusion**
  - A short plenary discussion rounding up the findings from each table;

- Next steps – taster for the next meeting;
- Feedback forms to record participants' views on the meeting.

Analysis between Stakeholder Meetings 1 and 2

1.37 A number of tasks would be carried out between the first and second meetings. The aim would be to review the process to date and undertake any corrective action necessary, analyse information gathered during the first meeting and prepare information to support discussions in the second meeting. Key tasks would be as follows:

- **Review and evaluate the first stakeholder meeting** in terms of attendance, representation, engagement with the tasks and discussion and information from feedback forms;
- **Prepare maps summarising stakeholder analysis of benefit**, by ecosystem service, ecosystem service category and in combination (to highlight areas producing the greatest range of benefits). Upload to Scotland Environment Web or project website;
- **Prepare 'technical' maps of benefit provision**, based on GIS mapping of datasets relevant to each scoped ES. Consider uploading to Scotland Environment Web or project website;
- Identify **gaps, areas of dis/agreement, areas to explore further** with stakeholders. Depending on the nature of information gaps this could include scoping out the requirement for any issue specific discussion groups 'offline' from the main stakeholder panel meetings;
- **Preliminary network analysis** for key land uses / ecosystems, based on the stakeholder and technical mapping exercises. Consider uploading to Scotland Environment Web or project website;
- **Preliminary analysis of 'demand' for ES** based on geographic areas and current and potential demand. Consider uploading to Scotland Environment Web or project website.

Stakeholder Meeting 2: Current benefits and beneficiaries

1.38 The second panel meeting would aim to reach consensus on the current benefits derived from the study area, agree how any gaps in knowledge should be addressed and explore the current and potential demand for these services. The meeting would comprise five main elements:

- **Brief introduction and recap**
- **Agreeing a definitive set of current benefits**
  - Feedback on ES mapping from Meeting 1 – by ecosystem service, ecosystem service category and in combination. Maps would be pinned up for inspection before the meeting, and each would be reviewed briefly in a presentation;
  - Comparison with technical analysis – by ecosystem service, ecosystem service category and in combination. Maps would be pinned up for inspection before the meeting, and each would be reviewed briefly in a presentation;
  - Agreeing 'definitive' mapping and evaluation of the significance of service provision. This would take the form of table discussions, informed by wall posters and network analysis diagrams for key services.

- **Filling the gaps**
  - Discussion about nature of information gaps (topic, scale/detail, significance etc.) and areas of disagreement and how best to resolve (e.g. through separate subject area discussion group covering agriculture or recreation) and consideration of benefit specific valuation work, or work at a more detailed level for specific land holdings or sites such as Flanders Moss.
- **Who benefits?**
  - Table based discussion distinguishing between 'types' of ES consumer, location of the consumption, current and potential demand, and the significance of the ES provided by the study area. This could be followed by an interactive 'post-it' session with participants recording the pattern of 'consumption' for each of the relevant ecosystem services provided by the study area.
- **Conclusion**
  - A short plenary discussion rounding up the findings from each table;
  - Next steps – taster for the next meeting;
  - Feedback forms to record participants' views on the meeting.

Analysis between Stakeholder Meetings 2 and 3

1.39 A number of tasks would be carried out between the second and third meetings. The aim would be to review the process to date and undertake any corrective action necessary, analyse information gathered during the second meeting and prepare information to support discussions in the third meeting. Key tasks would be as follows:

- **Review and evaluate the second stakeholder meeting** in terms of attendance, representation, engagement with the tasks and discussion and information from feedback forms;
- Facilitate and record any **subject area discussions** as required to fill gaps or address areas of uncertainty or disagreement. Upload findings to Scotland Environment Web or project website;
- **Finalise mapping of services** provided by the study area noting any remaining areas of uncertainty or gaps in the evidence base. Upload to Scotland Environment Web or project website;
- **Finalised evaluation of the significance of ES** provided by the study area based on stakeholder and technical analysis (suggest using a simple categorisation of none, low, medium, high). Upload to Scotland Environment Web or project website;
- **Finalised analysis of 'demand' for ES** based on stakeholder and technical analysis. Upload to Scotland Environment Web or project website.

Stakeholder Meeting 3: Winds of change

1.40 The third stakeholder panel meeting would move on from the definition of the current benefits derived from the study area to consider how the patterns of benefits could change in the future. This discussion will explore the effects of different kinds of change and will conclude with an introduction to the scenarios that will be explored in the fourth meeting. The meeting would comprise four main elements:

- **Brief introduction and recap**
    - Benefit mapping, evaluation and 'demand'. Information would be pinned up for inspection before the meeting and reviewed briefly in a presentation.
- **Drivers of change**
    - How has the way land in the study area is managed changed over the past 50 years? What are the reasons for this and what effect would this have had on the benefits we get from the area? Table based facilitated discussion;
    - What are likely to be the main drivers for future change? How might these changes affect the benefits we get from the area? Are there things we could do to support positive changes and reduce negative impacts on benefits? Themed, table based facilitated discussion – initially open, for the most part structured around key policy drivers;
    - Plenary discussion with feedback from tables, facilitated to draw out the main influences on the area, the key effects on the provision of benefits (by type, positive and negative) and the scope to minimise negatives, enhance positives and achieve win-win synergies.
- **Introduction to scenarios**
    - Overview of the purpose of scenarios
    - Brief description of four potential scenarios;
    - Discussion, informed by the previous meeting item (drivers of change), to confirm, modify or redefine these scenarios.
- **Conclusion**
    - Next steps – taster for the next meeting;
    - Feedback forms to record participants' views on the meeting.

Analysis between Stakeholder Meetings 3 and 4

1.41 A number of tasks would be carried out between the third and fourth meetings. The aim would be to review the process to date and undertake any corrective action necessary, analyse information gathered during the third meeting and prepare information to support discussions in the fourth meeting. Key tasks would be as follows:

- **Review and evaluate the third stakeholder meeting** – attendance, representation, engagement, feedback;
- **Preparation of four alternative scenarios**:
    - preparation of scenario description;
    - mapping;
    - preliminary analysis of how the supply of ES from the study area would be affected;
    - preliminary analysis of the effects of this change on the 'demand' for ES;
    - sensitivity testing against socio-economic scenarios.

- Consider uploading to Scotland Environment Web or project website;

Stakeholder Meeting 4: Scenarios

1.42 The fourth stakeholder panel meeting would focus on the evaluation of how the provision of ecosystem services could change under the four alternative scenarios. The meeting would comprise four main elements:

- **Brief introduction and recap**
  - ES mapping, evaluation, 'demand' and drivers. Information would be pinned up for inspection before the meeting and reviewed briefly in a presentation.
- **Scenarios**
  - Introduction to the four scenarios – allocation of one scenario per table
  - Group discussions
    - Discussion 1 – how has the provision of ES changed – major, minor, none, positive or negative?
    - Discussion 2 – who would be affected and how?
    - Discussion 3 – what could we do to maximise the benefits and minimise the impacts?
  - Feedback from tables
- **Visions and nightmares**
  - Facilitated discussion to draw out which aspects of the scenarios people would like to see realised, which aspects they would not like to see, with the aim of building a consensus vision for the future management of the study area.
- **Conclusion**
  - Next steps – taster for the next meeting
  - Feedback forms to record participants' views on the meeting

Analysis between Stakeholder Meetings 4 and 5

1.43 A number of tasks would be carried out between the fourth and fifth meetings. The aim would be to review the process to date and undertake any corrective action necessary, analyse information gathered during the fourth meeting and prepare information to support discussions in the fifth meeting. Key tasks would be as follows:

- **Review and evaluate the fourth stakeholder meeting** – attendance, representation, engagement, feedback
- Use information gathered from the fourth meeting to **work up a vision for the area's future**:
  - Description, including structured definition of changes in land management and the pattern of land uses / ecosystems
  - Mapping
  - Analysis of effects on ES provision
  - Analysis of effects on ES demand
  - Preliminary identification of trade-offs, decision points

- Preliminary **analysis against current policy and land management drivers** and anticipated changes
    - Aspects that could be delivered relatively easily
    - Aspects that would need policy to change
    - Aspects that would need land management practice to change
    - Aspects that would need other kinds of change
- Upload to Scotland Environment Web or project website.

Stakeholder Meeting 5: Action!

1.44 The final stakeholder panel meeting would review and explore what the vision might mean in practice. It would aim to identify and address areas of disagreement and define the kinds of activity need to move from vision to reality. The meeting would comprise four main elements:

- **Brief introduction and recap**
    - ES mapping, evaluation, 'demand', drivers and scenario analysis. Information would be pinned up for inspection before the meeting and reviewed briefly in a presentation.
- **A vision for the future**
    - Presentation of the vision for area's future
    - Group discussions (participants grouped by broad area of interest)
        - Discussion 1 - What does this mean for my area of interest (strengths, weaknesses, opportunities and threats)?
        - Discussion 2 – what are the key barriers to realising the vision – policy, practice, awareness, knowledge…?
    - Feedback – winners, losers, opportunities, barriers
- **Realising the vision – towards an action plan**
    - Group discussion - what needs to happen?
        - Refining the vision
        - Influencing policy
        - Action and implementation on the ground
        - Partnerships, capacity, information
- **Conclusion**
    - Next steps – how the results of the work will be reported, how the findings will be used on the ground
    - Process review and wash up – what worked, what could be better?
    - Feedback forms to record participants' views on the meeting

Analysis and reporting after Stakeholder Meeting 5

1.45 A number of tasks would be needed to draw the study to a conclusion, including:

- Refinement of **vision**

- Finalised analysis of **effects on ES supply and demand** and opportunities to mitigate negatives, maximise positives, develop synergies and win-win solutions
- **Identification of key actions** for the study area in the categories of policy (feedback to national and regional policy, expression of policy at a local level), implementation (measures on the ground), capacity/partnership;
- **Evaluation of the project** against key measures of success;
- **Methodological findings** and guidance for similar studies elsewhere;
- **Reporting** – technical and summary reports, potential use of Scotland Environment Web to host the reports and showcase the approach.

Final presentation meeting

1.46 A final meeting would provide an opportunity for all participants, and possibly the wider community, to discuss the finalised vision and actions. The meeting would also map out responsibility for key actions amongst the different stakeholder groups, including policy and decision makers, front line deliverers, land managers and the wider public. This will provide a vital step from planning to local ownership and implementation.