



International Permaculture Research Project

Survey 4 : Mapping the Routes to Discovery

by Cat Richards

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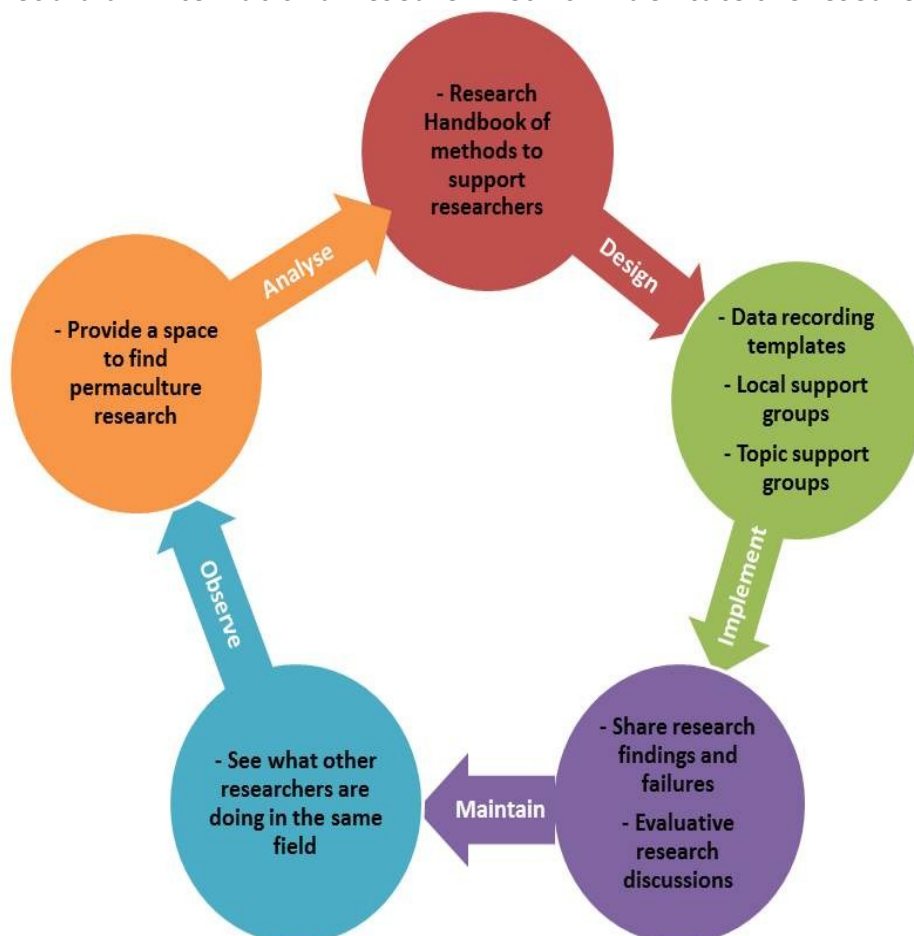
Executive Summary

The Permaculture Association UK works towards improving permaculture practice and building the evidence base for permaculture. To further these aims, the Association launched the International Permaculture Research Project which aims to support permaculture researchers and practitioners in sharing their work and developing globally consistent permaculture research programs. The survey reported here is the last in the series of four surveys (the reports from Surveys 1, 2 and 3 are available [here](#)) and aimed to examine the processes and tool permaculture researchers use to carry out research. In total, 73 participants were included in the analysis, which used narrative analysis and word clouds to identify common themes.

The main findings were:

- Pragmatic concerns are the major driver of permaculture research
- One way online channels and print channels are the main resources used to review existing research
- Soil was the most frequently measured aspect of a permaculture project
- Topics addressed and methods used are stunningly diverse
- The majority of researchers evaluate their research and share their findings using in person channels as well as both interactive and one way online channels

How could an international research network facilitate the research cycle?



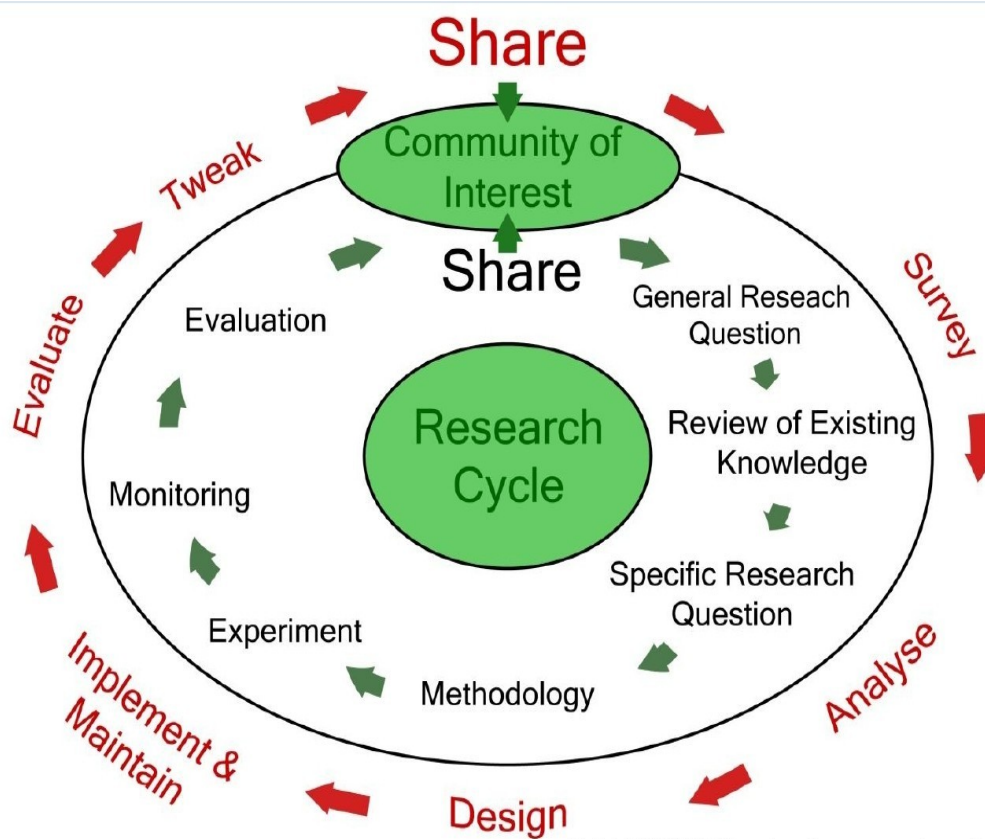
Contents

• Aims	p2
• Methods	p3
• Analysis and Results	p4
◦ Survey	p4
◦ Analyse	p6
◦ Design	p8
◦ Implement	p10
◦ Maintain	p12
• Discussion	p14
◦ What practical issues in permaculture research currently being applied to?	p14
◦ What resources do researchers use to review existing permaculture knowledge?	p14
◦ How do researchers decide what to research?	p14
◦ What methods do researchers use to carry out their research?	p15
◦ What tools do researchers use to collaborate on, evaluate and share their research?	p15
◦ How could an international research network facilitate the research cycle?	p16

Aims

The Permaculture Association UK is working on building the evidence base for permaculture and improving permaculture practice. The international permaculture research project was set up as a response to the recognition that there is a lot of permaculture research going on around the world but the majority is neither published nor disseminated. In order to support people in sharing their findings, and to further the development of consistent research programs around the world, it was decided to carry out four Surveys looking at different aspects of research to inform the building of a research network.

The first Survey investigated the scope and scale of permaculture research (full report available [here](#)) and Survey 2 looked at 'What research is wanted?' (full report available [here](#)). The aim of Survey 3 was to identify how respondents collaborate and share information (full report available [here](#)) and Survey 4, entitled mapping the routes to discovery, aimed to examine the processes and tools permaculture researchers use to carry out research.



Using the action research cycle (left) as a template, the survey explored each major phase of research:

- Survey
- Analyse
- Design
- Implement
- Maintain

Fig. 1) SADIMENTS and action research cycle

From this it is hoped that it will be possible to answer the research questions;

- What practical issues is permaculture research currently being applied to?
- What resources to researchers use to review existing permaculture knowledge?
- How to researchers decide what to research?
- What methods do researchers use to carry out their research?
- What tools do researchers use to collaborate on, evaluate and share their research?
- How could an international research network facilitate the research cycle?

Methods

The project set out to investigate how researchers and practitioners carry out permaculture research, so a survey method was used. A survey with open questions and prose answers was chosen to allow full expression of people's opinions and views whilst avoiding leading questions. Many questions had to be quite loosely worded to try and accommodate as many research approaches as possible. The survey acts like a giant brain-storming session where each person comes up with the answers alone and then they are pooled. The online survey format, in addition to being quick and relatively easy, also removes social factors which can have a negative influence on the productivity of such sessions where the primary goal is to distil into solutions a number of people's experiences of problems. Where appropriate a 'yes/no' question format was used.

The survey (available [here](#)) consisted of:

- an introductory page
- a page with a data protection query and personal details entry form
- a page exploring the 'Survey' phase of research
- a page exploring the 'Analyse' phase of research
- a page exploring the 'Design' phase of research
- a page exploring the 'Implement' phase of research
- a page exploring the 'Maintain' phase of research
- a feedback page
- a final page thanking respondents for participating

Narrative analysis was used to identify common themes in responses. This was achieved by inputting all valid responses into a mind map and then grouping them by common themes. For questions where no obvious common themes emerged from the narrative analysis, answers were then collated into a single text document and spell checked. This text was visualised as a word cloud (using [wordle](#)) using an online tool to help identify patterns in the data.

Analysis and Results

In total, 73 respondents responded to more than one question in a coherent manner and so were included in the analysis. Some responses contained more than one narrative (for a full table of narrative analysis results, please see Appendix 1) and thus are represented by more than one data point in some charts.

Survey

What practical issues do you think permaculture research is most applicable to?

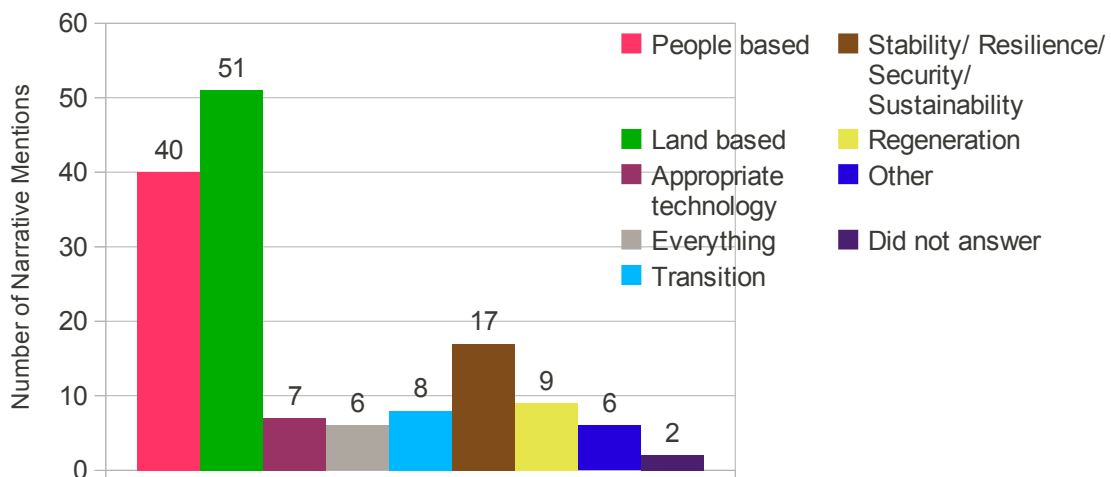


Illustration 1

There were as many responses to this answer as there were participants in the survey. The most frequently mentioned word was food (23 mentions) with design and systems the second most frequently mentioned words (11 mentions) followed by soil (10), people (9), sustainable (8), production (8) and management (8).

Typical answers mentioned multiple themes such as “the inclusion of ecological and social value to economically driven productive (eco)systems” and “food security, nutrition, income generation, livelihoods, improving production, establishing new systems for demonstration and of course for teaching”. 51 answers (70%) mentioned land based designs such as “erosion control, pest management, perennial crops”, “soil analysis, pest control, fertile topsoil building” and “growing food” and 40 answers (55%) mentioned people centred designs, such as “care of people using Permaculture design ethics and principles”, “social dynamics” and “quality of life issues such as greening of cities and open play spaces for children incorporated appropriately into public settings”. The theme of security and sustainability was raised in 23% of responses (n=17), “agroecology and sustainable living”, “food security” and “a coherent plan for a transition to sustainability” with 9 answers (12%) mentioning regeneration, “landscape regeneration and re-discovering community”, “earth restoration” and “re-mediation of degraded land”. Transition was mentioned in 8 answers (11%), “for the transition to resilience”, “describing the new paradigm and creating a roadmap to reaching it”, and 10% (n=7) of responses mentioned appropriate technology, “integrating different technologies from horticulture, renewable energy etc.”. 6 answers (8%) opined that permaculture research is applicable to “everything” and “varied” topics and a further 6 (8%) were classified as other, “survival of the species”. 2 respondents did not provide answers to this question (3%).

What resources do you use for reviewing existing permaculture knowledge and which do you consider the most useful?

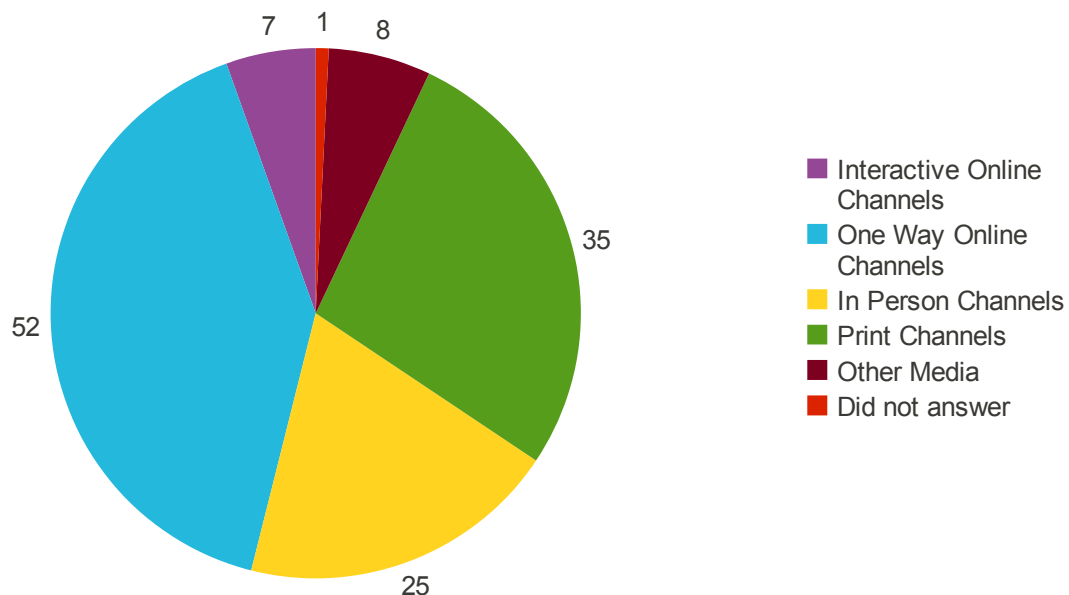


Illustration 2

The most frequently cited resource, mentioned in 71% of answers, (n=52) that respondents reported using to review existing permaculture knowledge were one way online channels such as websites, blogs and databases. In particular www.permaculturenews.org (website of the Permaculture Research Institute, Australia) was mentioned specifically in 10 responses. The second most frequently mentioned resources were books and magazines, which were mentioned in 35 answers (48%), followed by in person channels such as meetings, conferences and taught courses, referred to in 25 answers (34%). Only 7 responses (10%) mentioned interactive online channels such as email, social networks and forums and 8 responses (11%) mentioned other media such as "soil and water", "youtube" and "films". One respondent failed to answer the question (1%).

Analyse

What keywords would you use to describe your research?



Illustration 3

Answers to this question were too diverse to be classified meaningfully using narrative analysis so the answers were collated and analysed using the wordle tool to visualise the answers as a word cloud. The words 'permaculture' and 'research' were removed from the analysis as they were either in the question or assumed. 'Design' was the most frequently used word (7 mentions) followed by 'learning', 'food' and 'management' (5 mentions) and 'community' and 'systems' (4 mentions). Overall, land based keywords were used in 47 responses (64%) and people based keywords were used in 42 responses (58%) although there was significant overlap between the two categories. Some answers were specific, "permaculture, farm design, perennial polyculture, agroecological transition, diversified farming systems, Agroecological Movement", "permaculture in development co-operation, global learning for change, learning from the global south" and "dryland, desertification, bioprecipitation", whilst others were more open-ended, "qualitative and quantitative", "elusive, technical, web-oriented" and "ongoing, learning, adapting". Four participants skipped this question (5%).

How do you decide what to research?

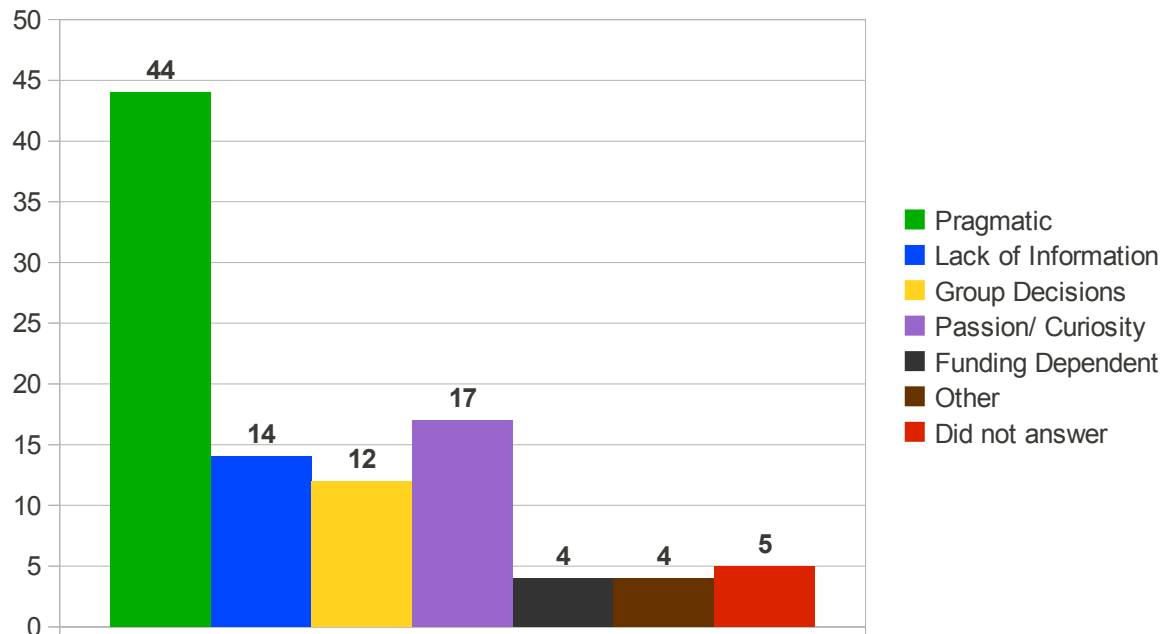


Illustration 4

When respondents were asked how they decided what to research, the most frequently used words were needs (13 mentions) and need (6 mentions), this was reflected in the 44 answers (60%) that reflected a pragmatic approach to deciding what to research. Many answers reflected the sentiments “I see what the environment needs, I look (at) what I can provide, and there's the research topic”, “my needs to answer the questions I have regarding my place” and “best fit between my qualifications and the project”. 17 responses (23%) suggested that passion and curiosity play defining roles in their research choices, “things that are important to me”, “whim” and “what I am curious about” and 14 responses (19%) highlighted lack of information about a topic as the impetus for research, “I reflect on what seem like the most pertinent gaps in our knowledge”, “depending on ... information needed to inform continued action in the project” and “I look for a burning question”. 16% of responses (n=12) mentioned that research topics were chosen through a group decision making process, “(we) decide together with our staff”, “interest generated at local food group meetings” and “I hang out a lot with people who are frequently in research mode and so, together, we define projects for each other”, whilst 4 answers (5%) mentioned that what they research is dependent on funding opportunities. 4 responses (5%) did not fit into any of the above categories and 5 respondents failed to answer the question at all (7%).

Design

What are the most important aspects of a permaculture project that should be measured and using what methods?

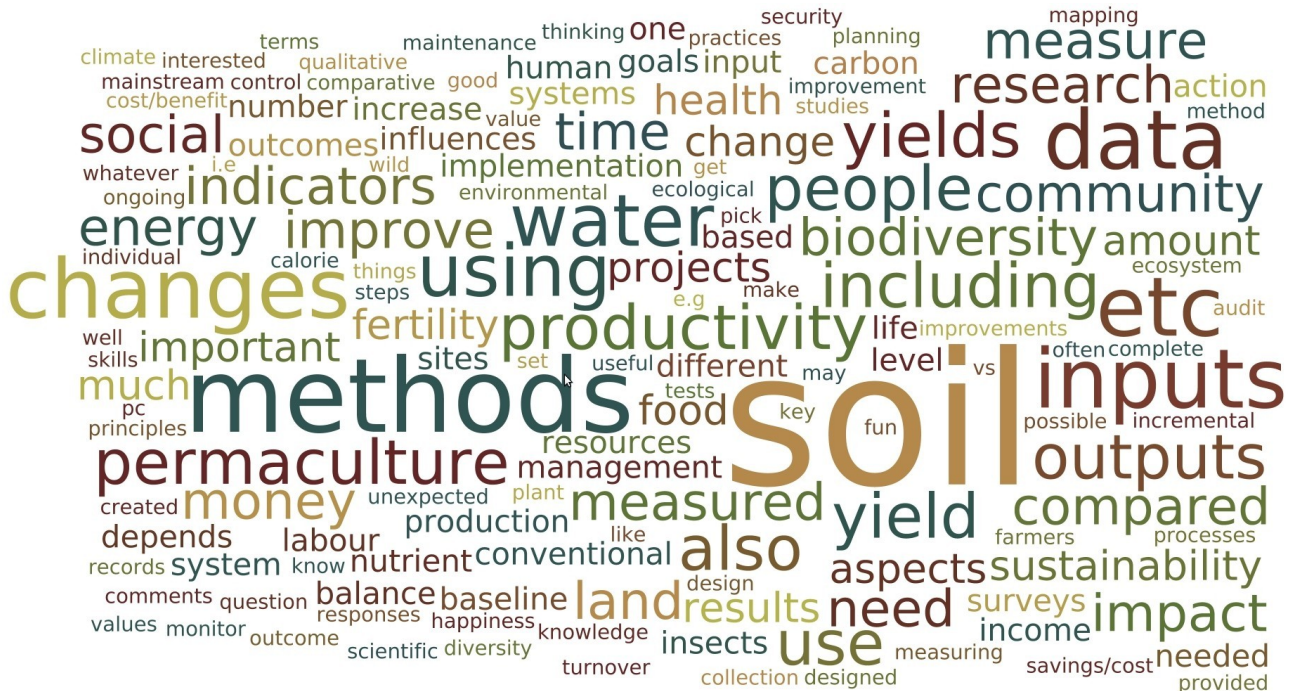


Illustration 5

Answers to this question were too diverse to be classified meaningfully using narrative analysis so the answers were collated and analysed using the wordle tool. The word 'project' was excluded as it was in the question. As suggested by the word cloud above, the most frequently mentioned noun was 'soil', mentioned 17 times, with the second most frequent nouns being 'changes' and 'inputs' (8 mentions). Other frequently used nouns were 'methods', 'water' and 'data' (7 mentions), 'outputs' (6 mentions) and 'biodiversity', 'indicators', 'productivity', 'community', 'people' and 'money' (5 mentions). Many answers shared the sentiment that "there is no one answer to this question!" and that "this depends on project format". There were many intelligent suggestions of what to measure generally, "in general, documenting incremental changes and the resultant responses measured against a baseline", "we need longitudinal studies also. There is a great need for different techniques which truly work for different geographic zones" and also specifically "energy audit of inputs and outputs", "soil fertility using scientific soil tests" and "Attitudinal and behavioural changes in the people involved in the project (surveys, before and after questionnaires, observations), policy changes in the local municipality or rural district (documented by-laws, ordinances, communications with regulatory bodies, etc.), eco-system services provided by the project (i.e. amount of new habitat created, amount of carbon sequestration, water quality improvements, etc)".

What research tools are the most useful for permaculture research and would ideally be covered by a 'research handbook'?

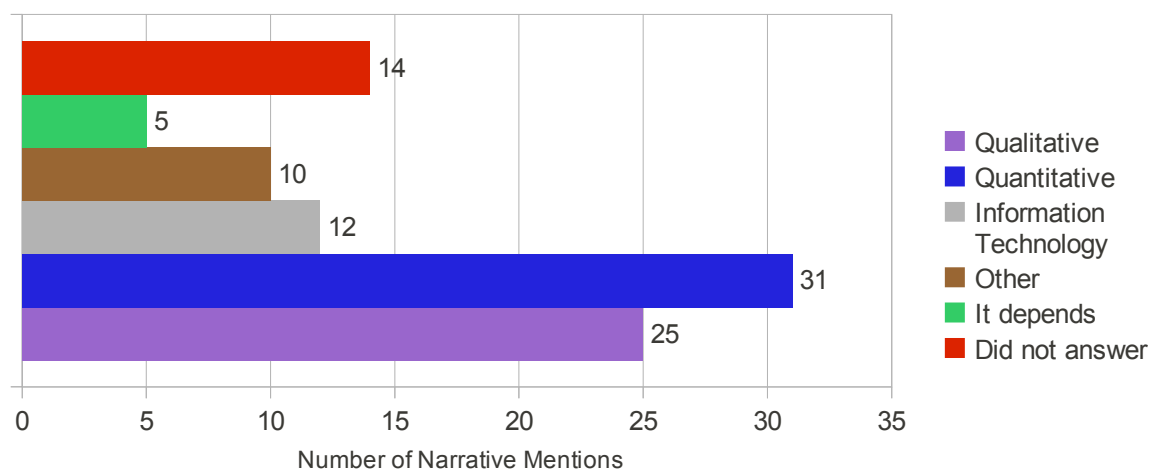


Illustration 6

Overall quantitative research tools were mentioned in 31 responses (42%) for example “how to test for soil health at home. Low-tech, ballpark measurements for tracking soil health over time: mircofauna diversity, organic matter, trace minerals, fungal communities”, “record keeping” and “how to measure yields”. Qualitative research tools such as “participatory and action-research approaches”, “interviews” and “” were mentioned in 25 responses (34%) and information technology research tools were mentioned in 12 answers (16%), for example “smart phones to collect audio, video and photos”, “online databases, supplier indexes” and “web posts, laptops and smart phones”. Five responses (7%) suggested that it “depends” and the question “can’t be simply answered” and 10 responses (14%) were classified as other, such as “basic scientific methods”, “how to meet academic standards for publishable research, how to get the research out into the community, how to bridge the gap between academics and practitioners” and “implementation is the main issue”. 14 respondents (19%) did not respond to the question.

Implement

What kind of experimental protocols and record keeping methods do you use in your research?

Maintain

How do you evaluate your research so that it feeds into further research?

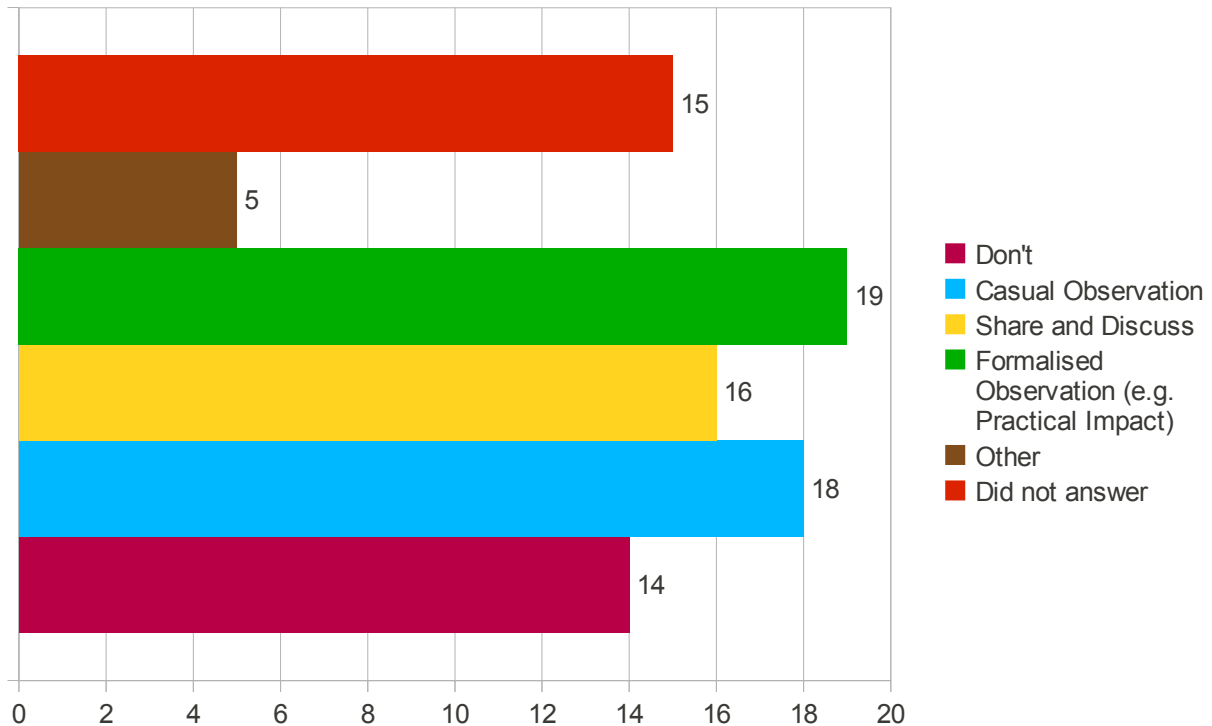


Illustration 9

When asked how they evaluate their research, most researchers responses included a mention of observations of some kind. 19 responses (26%) described processes of formalised observation such as “assessment gives a quantitative evaluation”, “end of season summary and review” and “yield measurements”, whilst 18 responses (25%) described more casual observation processes, for example “direct observation”, “all research leads to further questions and adaptations” and “through reflection and contemplation”. 16 answers (22%) mentioned the process of sharing and discussing research with others; “critical reflection in work teams organised holocratically”, “discussion”, “on-going discussions with academic partners”, and 14 responses (19%) explicitly explained that they do not evaluate their research; “I don't – not sure how?”, “I haven't yet”, “I have to improve on that!”. 5 responses (7%) were categorised as other and 16 respondents (22%) did not answer the question.

What tools have been most helpful in sharing your work and/or collaborating with other researchers?

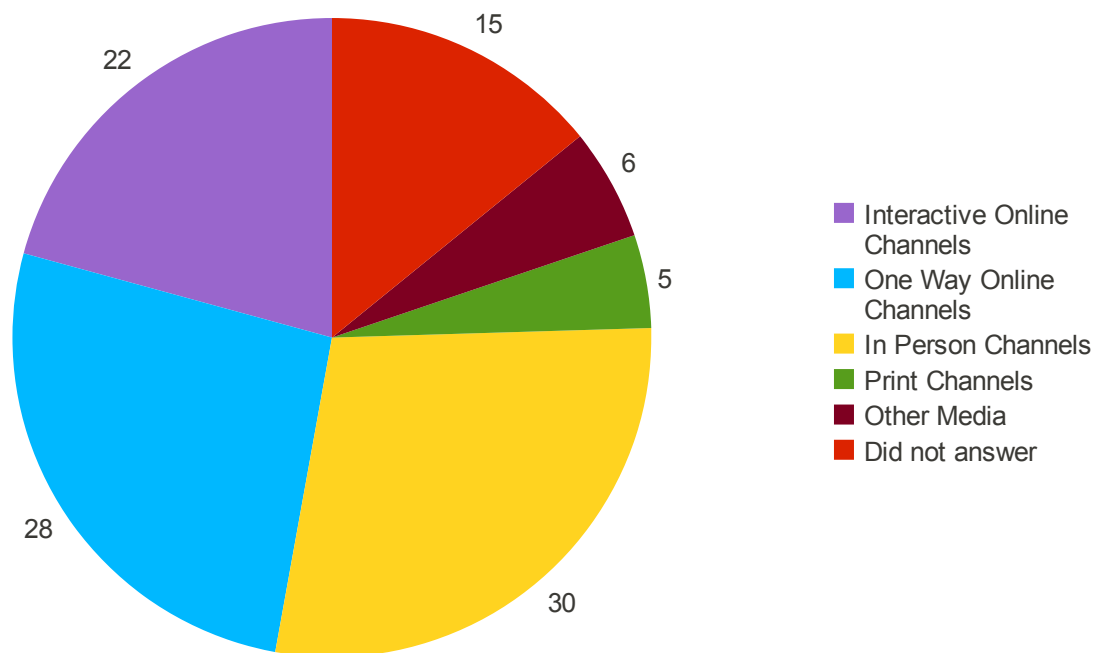


Illustration 10

The most frequently mentioned tool, brought up in 30 responses (41%), that respondents used to share research and collaborate were in person channels such as “practical demonstrations”, “conferences whether academic or industry-related” and “local groups – to bounce ideas off”. Respondents also reported that they use online channels to a large extent to share their research and collaborate with others. 28 responses (38%) mentioned using one way online channels such as blogs and websites whilst 22 answers (30%) described using interactive online channels such as skype, email networks and forums. Only 5 responses (7%) mentioned print channels such as books and magazines and 6 answers (8%) mentioned other media channels such as “music and poetry” and “video”. 15 respondents (21%) were response deficient for this question.

Discussion

What practical issues is permaculture research currently being applied to?

It would seem that permaculture research is being used to investigate just about any topic you can think of. Although there is still a slight bias towards land based questions and issues there is also a significant number of researchers looking at people based designs. Permaculture researchers are focussed on issues of appropriate technologies, resilience and sustainability, regeneration and transition. The keywords that researchers used to describe their research were correspondingly diverse and again there was a slight bias towards land based keywords (present in 64% of responses) compared to people based keywords (present in 58% of responses).

What resources to researchers use to review existing knowledge?

Researchers reported that they rely primarily on one-way online resources to review existing permaculture knowledge (mentioned in 71% of answers) such as websites, blogs and databases, in particular the PRI website received a lot of individual mentions. Print channels such as books and magazines were also cited by nearly half of the participants (mentioned in 48% of answers) with in person channels mentioned by a third of respondents (in 34% of responses). Interactive online channels were only mentioned by 7 participants suggesting that not many researchers rely on forums, social networks or emails to review existing knowledge on permacultural issues.

How to researchers decide what to research?

By far the clearest finding of the survey was that the majority of permaculture research is based very squarely on pragmatic considerations. 'Need' and 'needs' were the most frequently used words when the issue was raised and 60% of responses suggested the respondent used a pragmatic approach to decide what research issues to address. Other impetuses for research were passion and curiosity (mentioned in 23% of responses), lack of information (mentioned in 19% of responses) and through a group decision making process (mentioned in 16% of responses). Despite the emphasis on funding found in previous surveys, only 5% of answers suggested that the respondent made decisions about research direction on the basis of funding opportunities.

Many researchers also evaluate their past research so as to feed into future research (only 19% reported that they don't do this) with most researchers using observation, either on a casual basis (25% of responses) or using a more formalised method (26% of responses), to inform future research. 22% of responses suggested that respondents were using sharing and discussion based processes to evaluate research to feed into future research questions.

What methods do researchers use to carry out their research?

Perhaps unsurprisingly, the methods that permaculture researchers use are as varied as the topics with which they address them. This resulted in the data for the relevant questionnaire questions being very difficult to analyse using narrative analysis alone so the wordle tool was also used. The word frequency count from the collated answers, when respondents were asked which aspects of a permaculture projects it was important to measure, suggested that the most frequently assessed aspect of permaculture research projects is 'soil'. Other frequently mentioned words suggested that 'changes', 'inputs', 'outputs' and 'water' were other frequently monitored dimensions.

The responses that researchers provided when asked what research tools would ideally be covered in a 'research handbook' suggested that guidance on both quantitative and qualitative research would be welcomed, with 31 and 25 mentions respectively. Other answers (7%) pointed out that the methods must be appropriate to the research being carried out or suggested that help with information technology would be appreciated (16%). Other relevant aspects that were brought up in answer to this question were issues of communication, in particular about publishing research.

The experimental protocols and record keeping methods described by respondents were highly diverse. The common theme running through answers was that the keeping of records was perhaps more important than the specifics of the protocols and methods used as long as these too were recorded. Observation was the method most frequently mentioned as useful for the monitoring of variables, given the emphasis on observation in permaculture this seems appropriate.

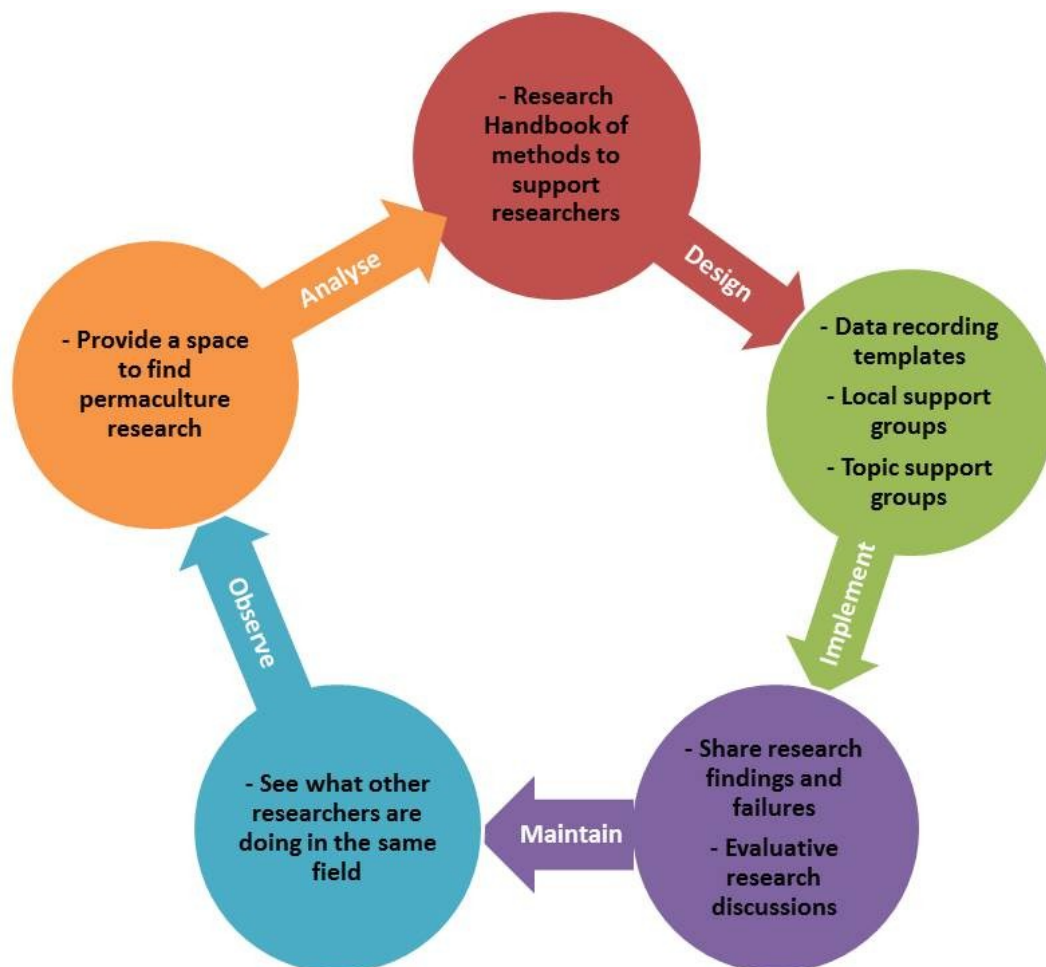
What tools do researchers use to collaborate on, evaluate and share their research?

14 responses (19%) stated that the respondents do not evaluate their research but most respondents used either formalised observation (26%), casual observation (25%) or sharing and discussion of results with others (22%) as evaluation methods.

The most frequently mentioned tools for sharing research and collaborating with others for research purposes were in person channels (41%) followed by one way online channels such as websites (38%) and interactive online channels such as forums, skype and email forums (30%). Interestingly these channels differ quite substantially from those used to review existing permaculture research.

How could an international research network facilitate the research cycle?

From these results, some suggestions for how an international research network could enable permaculture research by facilitating the research cycle are proposed.



The Permaculture Association UK would like to thank everybody who participated in and helped distribute the survey – we couldn't do this without your continued support and participation. You are all wonderful :)