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6 **Article Submission, Special Issue: Transdisciplinarity Revisited**

7

8 **Title:** Scientists' Situated Knowledge: Strong Objectivity in Transdisciplinarity

9

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13

#### 14 **Highlights**

- 15 • Empowerment is possible even when control is not fully ceded.
- 16 • Engaging different stakeholders alone falls short of addressing power imbalances.
- 17 • Transparently assuming positions should not be seen as hindrances, but as an asset.
- 18 • “Strong objectivity” might generate less partial accounts of contested issues.

19

#### 20 **Abstract**

21 Although transdisciplinary research has started addressing important epistemological  
22 challenges, as evidenced by the discussion about ‘mode 2’ knowledge production, its  
23 relation with postulations of ‘scientific objectivity’ is not yet well clarified. A common  
24 way of dealing with the epistemological challenge of situated knowledge production, as

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25 proposed by transdisciplinarity, is to point to the fundamental aspect of reflexivity. But  
26 reflexivity also includes being aware that power and control over the object is derived  
27 from the social position of researchers, an issue not often explicitly discussed in  
28 transdisciplinary research. Reflexivity thus represents an important but insufficient  
29 principle for guaranteeing appropriate levels of self-reflection within a process of  
30 knowledge coproduction. We therefore hypothesize that transdisciplinary research could  
31 greatly benefit from feminist scientific tradition, in particular the insights of standpoint  
32 theory and the concept of ‘strong objectivity’. We analyse, and reflect upon, how a recent  
33 transdisciplinary research initiative – conducted together with civil society organizations  
34 in (CSOs) in six countries: Bangladesh, Bolivia, Brazil, Burkina Faso, Ecuador and India  
35 – has benefited from the use of ‘strong objectivity’. We analyse how the social position  
36 of all stakeholders, including ourselves as the scientific actors in this initiative, influence  
37 the process and conditions of transdisciplinary knowledge co-production, and we discuss  
38 how power and control by scientists affects the process and conditions of interaction.  
39 Thereby we argue for the necessity of explicitly assuming sides in contested contexts for  
40 reaching objectivity in transdisciplinary research.

41

42 **Keywords:** transdisciplinarity; objectivity; sustainability science; pro-poor; resource  
43 governance

## 44 1. Introduction

45

46 After more than 20 years of conceptual and practical development, transdisciplinary  
47 research has started addressing important epistemological challenges, taking advantage of  
48 action research [1] and new science paradigms, such as post-normal science [2, 3]. We  
49 understand transdisciplinarity as part of a process of knowledge co-production between  
50 scientific and non-scientific actors, involving the co-production of systems, target, and  
51 transformation knowledge [4, 5]. At the beginning, the process of knowledge co-  
52 production concerns the identification of jointly defined societal problems, often related  
53 to specific issues of sustainable development [6]. The societal problem agreed upon  
54 serves as a common denominator for co-producing *system knowledge*, i.e., how the  
55 system works that produces the *problematique* under scrutiny. System knowledge is  
56 generally based on the integration of, and dialogue between, various scientific and non-  
57 scientific perspectives on the issue at hand. The integration of different perspectives –  
58 that might even include different epistemic foundations of knowledge [7] – is a  
59 fundamental feature of transdisciplinary research. Typologies of different forms on  
60 integrating multiple perspectives are also used for distinguishing different types of  
61 transdisciplinary research [8]. The values underpinning the framing of ‘what the problem  
62 is’ are generally made explicit and serve as *target knowledge* that expresses a set of  
63 shared normative principles that define the values to which a solution of the problems  
64 should be attached. Finally, systems and target knowledge feed into *transformation*  
65 *knowledge*, which shows what type of collective action can be used for changing the  
66 system in view of the principles expressed in the form of target knowledge.

67 One way of approaching the epistemic dimension of transdisciplinarity is  
68 understanding it as ‘mode 2’ knowledge production. In opposition to classical, rather  
69 positivist forms of knowledge production (called ‘mode 1’), transdisciplinary ‘mode 2’  
70 knowledge production aims at producing ‘socially robust’ rather than classical  
71 ‘scientifically objective’ knowledge [9]. ‘Mode 2’ is open toward the following five  
72 aspects: multiple interactions between a larger number of experts and sites of expertise  
73 (i), different forms of knowledge and actors representing them (ii), science leaving the  
74 academic field and ‘meeting the public’ (iii), allowing it to speak back to science,  
75 peoples’ interests, concerns and perspectives entering into science (iv) and, in some  
76 cases, providing essential data for every aspect of the research process (v) [10]. Socially  
77 robust knowledge is often assessed by appreciating how the process of knowledge-  
78 coproduction within the specific social and political milieus in which it happens achieved  
79 to be salient, credible and legitimate [11]; the epistemic quality of research is measured  
80 not towards an abstract ideal of scientific objectivity, but in function of the socio-political  
81 quality as perceived by the various actors involved in transdisciplinary knowledge co-  
82 production.

83 Although ‘mode 2’ knowledge production represents important progress with  
84 regard to the formulation of basic epistemological principles, their conceptual and  
85 methodological operationalization into concrete activities of transdisciplinary knowledge  
86 co-production is not yet well clarified. A critical epistemological aspect of ‘mode 2’  
87 knowledge co-production concerns its relation with postulations of ‘scientific  
88 objectivity’, i.e., understanding how to deal with the implied influence of the observer on

89 the research object and how to deal with the values and social positions represented by  
90 the researcher and other non-scientific stakeholders [12, 13].

91 A quite common way for dealing with the epistemological challenge of situated  
92 knowledge production, as proposed by transdisciplinarity, is to point to the fundamental  
93 aspect of reflexivity as an intrinsic component for the conceptual and epistemological  
94 [14, 15], as well as for the practical levels of transdisciplinarity [16]. In the definition of  
95 transdisciplinarity offered by Lang et al. [17] reflexivity plays a primordial role in  
96 integrating the method-driven scientific process of knowledge co-production that is ‘...  
97 aiming at the solution or transition of societal problems and concurrently of related  
98 scientific problems by differentiating and integrating knowledge from various scientific  
99 and societal bodies of knowledge’.

100 However, reflexivity also involves being aware that power and control over the  
101 object is derived from the social position of researchers, and politically dominant groups  
102 influencing scientific agendas – e.g., policy makers, funding agencies. Furthermore, there  
103 are less evident mechanisms that exert influences on science through defined institutional  
104 structures, research priorities and strategies, languages, narratives, and discourses [18].

105 Practically, political and power dimensions are often not explicitly discussed in  
106 transdisciplinary research, although this approach has been suggested as an avenue for  
107 generating transformative knowledge able to question existing power structures and alter  
108 the status quo [19]. Particularly when power asymmetries between stakeholders are  
109 evident in the research collaboration process, to implicitly neglect or to simply negate  
110 these might have important implications for the transformative potential of  
111 transdisciplinary science. Moreover, scientific actors, analogous to non-scientific ones,

112 also hold a position in the social matrix, and subsequently a set of pre-existing ideas on  
113 how to address the issue at stake. If this condition is taken into account, the following  
114 questions emerge: How are the involved stakeholders positioned? What power is derived  
115 from that position? How do the different stakeholders try to influence knowledge co-  
116 production?

117         With regard to these specific questions on the effects of the mutual influences of  
118 the observer on the observed, reflexivity as proposed by transdisciplinarity represents an  
119 important but insufficient principle for guaranteeing appropriate levels of self-reflection  
120 within a process of knowledge co-production. We therefore hypothesise that  
121 transdisciplinary research could greatly benefit from feminist scientific tradition in which  
122 the roles and influences of researchers on actors with whom they interact receive  
123 significant attention. Feminist scientific traditions therefore provide theoretical and  
124 conceptual guidance for dealing with the ‘objectivity challenge’ of transdisciplinarity.  
125 Standpoint theory, as elaborated in feminist studies, provides one avenue for addressing  
126 the issue of political and hidden power dimensions within projects and practice of  
127 research. The point of divergent positions and their impact on the transdisciplinary or any  
128 other research process relates to the longstanding epistemological debates around  
129 ‘objectivity’ in science since the mid-19<sup>th</sup> century. The notion of scientific objectivity,  
130 both in social and natural sciences, has been criticized from a number of different  
131 perspectives, referring inter alia to subjective processes of object selection, to  
132 measurements, to shared beliefs within a given scientific community, and to the relativity  
133 of all perspectives. However, the idea of scientific neutrality and objectivity widely  
134 persists in society, and notably in natural sciences. Accordingly, scientists might be

135 perceived as neutral or objective observers having no stake or vested interests in their  
136 research objects. Referring to the social sciences, Max Weber argued that objectivity, in a  
137 narrow sense of the word [12], is an unreachable goal due to scientists' subjective  
138 interpretations of social action and social behaviour [20]. Another milestone in the  
139 criticism of scientific objectivity in general was set by Thomas Kuhn, in his analysis of  
140 how the implicit social hierarchy of scientific paradigms influences whether or not  
141 contradictions to a paradigm are taken up [21]. These points have been strongly echoed,  
142 leading to intense debates, such as various editions and varieties of the so-called dispute  
143 around a 'value-free' science in German-speaking social sciences [22] and the 'science  
144 wars' in the United States in the 1990s [23]. In particular, critical theory and  
145 postmodernism have subscribed to criticism of objectivity [24].

146 Standpoint theory is a more recent critical theory that is enlightening in this regard.  
147 Most prominently, feminist standpoint theorists such as Sandra Harding [13, 18, 25] have  
148 criticized the conventional conception of scientific objectivity as 'weak objectivity'. Due  
149 to biases of individuals and shared biases of scientific communities, 'weak objectivity' is  
150 only able to provide partial and distorted answers. Standpoint theory acknowledges that  
151 all human thought arises in a particular social situation and can only be partial, so that  
152 knowledge claims are always socially situated. One's social situation both enables and  
153 sets limits on what one can know.

154 Without subscribing neither to epistemological relativism nor to objectivity as  
155 understood by proponents of 'neutral science', Harding and others argued for a 'strong  
156 objectivity', which follows stronger standards for 'good method' in order to maximize  
157 objectivity. To achieve this, scientists have to reflect on their social situatedness in the



158 social matrix and the implications that this has for their position, their perspectives, and  
159 their power.

160         Moreover, some positions in the social matrix are more fruitful for research than  
161 others. According to Harding and other feminist scholars, some social locations are more  
162 privileged in terms of exercising power and influencing scientific agendas. At the same  
163 time, this implies that those individuals and communities are unable to see the social  
164 mechanism leading to dominance and discrimination of ideas and people and thus are  
165 unable to see their own biases. Gender is understood as just one way of how  
166 discrimination and marginalization occur – along with race, class, ethnicity, among others  
167 – which lead to multiple and individual constellations of dominance and discrimination.  
168 The argument is that research starting off from marginal lives offers more enlightening  
169 perspectives because this allows seeing humans' relationship with each other and with the  
170 natural world without the biases that those immersed in a dominant group are unable to  
171 see. This means researchers taking their lives and perspectives which offer better initial  
172 angles for critical and reflexive investigation.

173         This does not call for naively assuming the viewpoints of those marginalised  
174 groups, but rather pursue a logic of discovery that uses the critical potential as a starting  
175 point, including several different and possibly conflicting marginal lives. Thereby, 'less  
176 false' (Harding) and more objective accounts of the world can be obtained.

177         Upon this background, this paper aims to explore the added value, potentials, and  
178 limitations resulting from bringing transdisciplinary knowledge co-production into  
179 dialogue with standpoint theory and the notion of 'strong objectivity'. For that purpose  
180 we analyse, and reflect upon, how the design of a project and process aiming at co-

181 producing knowledge on pro-poor resource governance has benefitted from the use of  
182 ‘strong objectivity’. This paper analyses a recent transdisciplinary research initiative  
183 conducted by the Institute for Advanced Sustainability Studies (IASS) and the  
184 International Fund for Agricultural Development (IFAD), together with civil society  
185 organizations in (CSOs) in six countries: Bangladesh, Bolivia, Brazil, Burkina Faso,  
186 Ecuador and India. The research initiative focussed on the issue of ‘Pro-Poor Resource  
187 Governance under Changing Climates’ (ProPoorGov). It explicitly assumed a normative  
188 position towards resource governance. We understand pro-poor resource governance as  
189 governance systems that are not defined from the outside, but of which the contents are  
190 co-defined directly involving the poor actors in the decision-making processes. They  
191 therefore aim, by their nature and structure, at outcomes that are able to favour the poor  
192 [26, 27].

193 In a first step (section two), we present how the key principles of transdisciplinary  
194 research were translated into the design, implementation, and practice of the process of  
195 knowledge co-production. In a second step we analyse and discuss how the social  
196 position of all stakeholders, including ourselves as the scientific actors in this initiative,  
197 influence the process and conditions of transdisciplinary knowledge co-production. We  
198 discuss how power and control by scientists affects the process and conditions of  
199 interaction. Thereby we argue for the necessity of explicitly assuming sides in contested  
200 contexts for reaching objectivity in transdisciplinary research. Future transdisciplinary  
201 research might increase its transformative potential if its validity is measured not towards  
202 ‘mode 1’ ideals of objectivity, but towards societal robustness, an increase of reflexivity,  
203 and communicative action to which transdisciplinarity is able to contribute.

204

## 205 **2. Results: Steps and challenges when implementing transdisciplinary research**

206

207 In order to argue for attaching more importance to the objectivity question in  
208 transdisciplinary research, this section briefly presents evidence gathered in the practical  
209 application of the principles of transdisciplinarity in a particular research initiative, the  
210 ProPoorGov project. Several contributions to the literature on transdisciplinarity have  
211 pointed out the challenges of incorporating transdisciplinary principles in research  
212 design, implementation of activities, and evaluation [28-31]. We acknowledge that some  
213 recurrent challenges are largely explored in the academic debate – for instance the  
214 necessity of reaching broad acceptance on consistent frameworks, with accompanying  
215 common terminology. Thus, we focus on describing those practical challenges more  
216 directly related to the objectivity concern.

217

### 218 *2.1 The research project ‘Pro-Poor Resource Governance under Changing Climates’*

219

#### 220 *2.1.1 Rationale and approach*

221

222 After the 2008/09 food price crisis, land has re-emerged at the core of the rural  
223 development agenda [32, 33], triggering a broader debate on resource governance [34],  
224 and, more precisely, what is and how to attain pro-poor governance [27, 35]. In many  
225 countries, a rich body of progressive land legislation already exists, which intends to  
226 make the livelihoods of resource users more food secure and less vulnerable, and

227 contribute to sustainable resource use [36]. However, the conditions in which rules are  
228 put into practice are severely affected by institutional constraints, such as government  
229 performance, information asymmetries, and power imbalances. As a result, it is not rare  
230 to find blatant gaps between formal legislation design and its implementation [37]. In  
231 these situations, local civil society organizations (CSOs) that work for and with poor rural  
232 groups have been trying different strategies to cope with this disconnection. CSOs are  
233 placed in a favourable position when it comes to understanding the local context and  
234 background, which might be restricting or diverting the implementation of resource  
235 governance legislations addressing access, tenure, and transparency [38, 39]. Even more  
236 importantly, by pursuing a local political agenda and actively engaging in political  
237 processes, CSOs have first-hand experience of power disputes. Thus, getting deeper  
238 insights into their strategies and building bridges between the grassroots level and policy  
239 arenas of different levels is highly useful with a view to improved pro-poor governance.  
240 A transdisciplinary research project on pro-poor governance of land and related resources  
241 was initiated by an international development organization and a research institute. This  
242 starting point entails an explicit normative positioning for pro-poor governance, and  
243 therefore engages with communities, CSOs, and other stakeholders. This was not a  
244 problem, but a necessary requirement for achieving ‘strong objectivity’. In practical  
245 terms, this meant that all stakeholders – including the international organization and  
246 researchers – had to share a common goal and an agreed-upon set of values towards how  
247 resource governance should be transformed. This point was essential for linking to the  
248 question of objectivity and is further reflected upon in the discussion section.

249

### 250 2.1.2 *Implementation*

251

252 During the execution of the project, several challenges emerged. Before discussing  
253 two relevant examples, it is necessary to outline the implementation steps of the  
254 ProPoorGov project. Without questioning the usefulness of simplifying schemes –  
255 usually suggesting to distinguish between three phases of transdisciplinary research [28,  
256 40] – the following section describes the conduction of the ProPoorGov project in seven  
257 steps: i) identification of partner organizations, ii) identification of cases, iii) formulation  
258 of research questions and boundaries of the cases, iv) choice of analytical frameworks, v)  
259 data collection, vi) elaboration of analysis (seven case studies and synthesis analysis), vii)  
260 discussion and communication of results. Obviously, one can argue for clustering these  
261 steps, but keeping a finer distinction facilitates the understanding and analysis of the  
262 different roles that each step played during the implementation of the project.

263 Firstly, guidelines for the selection of partner organizations (phase i) were  
264 elaborated upon by the researchers in coordination with the respective contact person  
265 within the international organization responsible for their operations in the targeted  
266 countries: Bangladesh, Bolivia, Brazil, Burkina Faso, Ecuador, and India. Other contacts  
267 were also established with persons known from past research experiences. It was  
268 explained that the selection guidelines should serve as loose recommendations for  
269 exploring cases and partners in the context of a high degree of flexibility. After receiving  
270 a number of suggestions and consultations with potential partner researchers, a  
271 partnership was established. Table 1 presents the list of partners involved and a very brief  
272 description of each organization.

273

274 **TABLE 1 HERE**

275

276 The second phase consisted of selecting the cases for study (phase ii). Rather than  
277 instructions, the guidelines served as locators of the specific selected case inside the  
278 wider topic of research, in this case, governance of natural resources. A similar procedure  
279 as with the identification of partners was taken. The research staff elaborated loose  
280 guidelines that were presented to, and discussed with, the CSOs. A very high degree of  
281 flexibility was communicated to CSOs; different possible cases were jointly discussed,  
282 transferring the ultimate decision to the local CSOs. In most cases, CSOs suggested only  
283 one option, while in others two or more were indicated. This deliberative mode of  
284 negotiating the cases allowed the advancement of the production of a shared and context-  
285 sensitive understanding of problems and potential solutions.

286 The formulation of the research questions that set the boundaries of the cases  
287 (phase iii) was a key activity in the research collaboration. Since this process requires a  
288 deeper dialogue on the different understandings around a given context, a twofold  
289 approach was taken. First, a pilot workshop with only two CSOs (Brazil and India) was  
290 organized, with participation of staff from a diverse set of institutions including the Food  
291 and Agriculture Organization (FAO), universities, and the German Development  
292 Cooperation Agency (GIZ), among others. The main purpose of this event was to  
293 experiment with how such a diverse group could reach consensual decisions on the  
294 boundaries of the two cases through jointly elaborating a set of research questions to be  
295 addressed in the case studies. Second, in the case of all other partners (Bangladesh,

296 Burkina Faso, Bolivia and Ecuador), research staff visited the CSOs in their localities,  
297 participating in field visits and holding several rounds of dialogue with the respective  
298 organizations, in order to reach a consensus on the research questions.

299 In this initiative, analytical frameworks were selected (phase iv) in parallel with the  
300 elaboration of the research questions. The researchers suggested the use of two main  
301 analytical tools: i) an adapted institutional change framework based on new  
302 institutionalism [41, 42], complemented by elements of the ii) sustainable livelihoods  
303 framework [43, 44]. Substantial discussions took place between researchers and CSOs  
304 around the necessity, appropriateness, and feasibility of using these frameworks for  
305 guiding data collection and analysis. In the cases of Brazil and Bangladesh, CSOs opted  
306 to complement the research with other analytical tools derived from a theoretical basis  
307 that they were more familiar with. In the resting cases, in order to assure a higher level of  
308 comparability across cases, the frameworks proposed by the researchers were used.  
309 Taking account of the resulting analytical diversity for the researchers generated  
310 additional requirements for all case studies, in order to assure that these commonalities  
311 could be explored in all case studies.

312 It was jointly decided that both researchers and CSOs participate in data collection  
313 (phase v). This was considered necessary for the researchers to develop a deeper  
314 understanding of the local *problematique*, and for CSOs it enabled the development of a  
315 more pluralistic view, enriched by the researchers, on the issues being studied together.  
316 Similarly to data collection, the elaboration of analysis (phase vi) was also designed as a  
317 joint exercise between researchers and the CSOs' staff. The teams engaged in substantial  
318 dialogues, and in an iterative process for the elaboration of two main products: individual

319 reports for each case study, coordinated by the respective local CSOs, and a final report  
320 that addresses, compares and analyses all case studies, coordinated by the research staff.  
321 The results of the case studies are not further described here, but they are being  
322 documented [45].

323         Communicating and discussing the case studies with a broader set of stakeholders  
324 (phase vii) were also key activities in the project. In some cases, such events were  
325 conducted even before the elaboration of any written materials, while in others reports  
326 and briefs were already prepared prior to the events. Essential points raised in those  
327 events were taken up in the final reports. In more precise terms, two main activities were  
328 aimed at generating this discussion, thus contributing to triggering social processes  
329 towards pro-poor resource governance. The first comprised local and/or national  
330 workshops, organized either in the capitals of the regions where the cases were located,  
331 or in the national capitals. In these workshops, a wider range of audience members took  
332 part: local administrative staff, political decision makers from different government  
333 levels, development practitioners, journalists, and representatives from other civil society  
334 organizations. These workshops served not only as opportunities for presenting and  
335 discussing results, but also as occasions for building bridges between CSOs and decision  
336 makers. The second activity consisted of a final workshop with the presence of all CSOs,  
337 the initiating organizations, besides other invited stakeholders.

338         Based on the CSOs assessments conducted in the final phase, they perceived  
339 several gains that led to their empowerment. First, the project provided them with  
340 financial resources that allowed them to document and analyse their experiences more  
341 than they usually are able to do; this allowed them to increase their knowledge base,



342 which inter alia can serve for future advocacy work. Second, it also increased their  
343 visibility, for example by means of media coverage following the national workshops.  
344 Third, these workshops further contributed to an increased reputation perceived by  
345 political decision makers who, in several cases, mentioned that they found the study  
346 highly useful and acknowledged the role of CSOs in policy design. They acknowledged  
347 furthermore that this is contrary to their common perception of CSOs being merely  
348 disturbing organizations. Fourth, particularly during the concluding workshop, CSOs  
349 could establish links not only with the other involved organizations working on similar  
350 issues or in similar conditions, but also to decision makers of the international  
351 organization. Lastly, the project implied a capacity building element, as young  
352 researchers were often involved in the case studies. In sum, CSOs improved their access  
353 to decision making processes, and also achieved an increased standing in the eyes of local  
354 and national political decision makers and the international organization.

355

## 356 2.2 *Challenges faced during implementation*

357

358 As commented above, several challenges to transdisciplinary research have already  
359 been addressed in scientific discussions. However these challenges, directly related to the  
360 objectivity concern, have not been at the forefront of these contributions. Through  
361 exploring these sorts of challenges found during the implementation of the ProPoorGov  
362 project, important gaps in existing practices in transdisciplinarity might be revealed for  
363 further transdisciplinary endeavours.

364 Two challenges, general in nature and interrelated, emerged during the research  
365 process: the question of how much control over the process is ceded from researchers to  
366 CSOs, and the question of the influences of different pre-existing positions on the issue.  
367 The latter was associated with correspondent different expectations, which in some cases  
368 led to divergences on particular decisions about the research.

369

### 370 *2.2.1 Researchers controlling the process versus joint leadership*

371

372 First, mandated to carry out the research by, and in collaboration with, an  
373 international organization, the researchers were in the position of initiating the contacts  
374 and research activities and of coordinating the elaboration of several case studies. All  
375 phases of the research were indeed conducted jointly, i.e., in collaboration with the  
376 different partner organizations. However it implied a clear and non-ceded coordination  
377 role taken by the researchers. They were the people giving the allowed time, setting  
378 guidelines for case selections, and, together, indicating the core steps of the research  
379 processes. Yet this was combined with a high degree of flexibility in order to adjust the  
380 different schedules and work cultures, respond to any concerns, and negotiate as much as  
381 possible. This can be illustrated by the choice of analytical framework expected to allow  
382 for a common thread and a common denominator for subsequent synthesis analysis. The  
383 researchers chose an institutional change framework [41, 42]. However, it turned out that  
384 some organizations were not comfortable with such a general and abstract analytical  
385 framework, and did not see clearly how this would translate to their cases. In other cases,  
386 organizations deliberately adopted the framework. The researchers did not insist on using

387 it. Instead, they decided to be more flexible and engage themselves with the cases without  
388 an elaborated framework, reducing the analytical tools to five thematic ‘minimum  
389 requirements’ covering key topics of land governance. Aiming to ensure a common  
390 analytical thread, the following points were addressed: i) ‘what are the current resource  
391 use patterns?’, ii) ‘what are people’s perceptions of the influence of resource use patterns  
392 on their livelihoods?’, iii) ‘what is the natural resource governance regime that underpins  
393 the observed resource use patterns?’, iv) ‘what capacity do poor rural people have to  
394 adapt their livelihoods to changing environments (socio-economic and physical variations  
395 including climate)?’, and v) ‘do these adaptation strategies include changes in resource  
396 governance or do they operate through different strategies?’. Thus, the decision on the  
397 framework was a negotiated one, in which room for manoeuvre was certainly allowed,  
398 but coordination was not ceded.

399

#### 400 *2.2.2 Differences in values and positions towards the issue*

401

402 Second, in the course of the research, situations of incongruity between the  
403 respective civil society organization and the researchers occurred in some cases,  
404 regarding certain aspects of how to carry out the research. These were related to different  
405 pre-existing perceptions of the issue – pro-poor land governance – and the different  
406 positions of the respective CSO and the researchers. As an illustration of this point, one  
407 case study on community-based management of common land was jointly elaborated  
408 with a CSO in Rajasthan, India. They have been working with rural poor populations and  
409 lobbying for community-based management of common land for more than four decades,

410 and wanted the study to be a documentation of successful cases that they could use  
411 afterwards for influencing local political decisions. Discussing the selection of villages  
412 for the case study, the researchers were opting for a balanced set of successful cases,  
413 unsuccessful cases, and cases in which no external intervention on community-based  
414 management of common land had been undertaken. This generated discussions and  
415 negotiations, and revealed different understandings about expectations and the nature,  
416 approach, and purpose of the case study.

417         Reflecting on these incidences, it becomes clear that they emerge from different  
418 positions and perspectives on the issue. CSOs obviously do take sides, but researchers too  
419 have their own values and positions that they implicitly or explicitly bring into the  
420 research.

421         Civil society organizations, on the one hand, openly take sides and have a clear-cut  
422 position on different issues, which they might justify on the basis of their vision of  
423 society, and its relation to the planet. It could be argued that one reason for this is that  
424 CSOs have stronger social and personal ties with the people directly affected by the  
425 problem, at least compared to researchers. Moreover, CSOs have a stronger and more  
426 direct interest in aligning the outcomes with their positions, given their high pressure to  
427 demonstrate to their funders and beneficiaries that their approach to tackling the problem  
428 is successful. Researchers, on the other hand, are often perceived as being neutral and  
429 objective actors following rational scientific criteria without having a stake in the issue.  
430 This, we argue, is generally wrong, and not only in cases in which they explicitly assume  
431 a normative position, such as in the described pro-poor project.

432 It is worth mentioning, however, that in this particular case the divergences were  
433 not fundamental in nature, as there was a common ground to strive for a transformation  
434 of land governance for the benefit of poor rural populations. Thus, CSOs and researchers  
435 started the transdisciplinary work from a common denominator, a normative standpoint.  
436 Against this backdrop, different expectations and ideas of the implementation were  
437 altogether of minor significance, albeit not irrelevant. This points to the general fact that  
438 each stakeholder in a transdisciplinary process, including the scientific one(s), has a  
439 specific position and standpoint that influences the process and outcomes, regardless of  
440 whether or not they are aware of them and make them explicit. This is a major point  
441 elaborated in the following section.

442

### 443 **3. Discussion: Control, objectivity, and normative positions in transdisciplinary** 444 **research**

445

446 The literature on transdisciplinarity has extensively discussed and acknowledged  
447 how different types of knowledge, held by different types of stakeholders, can be  
448 integrated in processes that ultimately lead to new co-generated knowledge, which is  
449 socially robust [46] and has the potential for societal transformation. It seems that one of  
450 the main assumptions taken by the proponents of this approach is that the different  
451 stakeholders can indeed effectively collaborate, at best on equal footing, although  
452 stakeholders may have different values, and, more importantly, may have different  
453 influences over how the transdisciplinary process is conducted [47-49]. We argue that  
454 this assumption needs to be revisited, pointing to the following aspects: how

455 transdisciplinarity projects are controlled, how researcher – in a setting in which all  
456 stakeholders naturally have different positions impacting on the research – position their  
457 values and opinions, and how transdisciplinary processes can be conducted when  
458 normative positions towards the issue are assumed and even benefit from this. We discuss  
459 these concerns in this section, using evidence from the ProPoorGov project described  
460 earlier. More precisely, we elaborate on the issues of: i) coordination and control; ii)  
461 criticism of scientific objectivity applied to transdisciplinarity; and iii) the rationale for  
462 adopting a pro-poor approach in transdisciplinary research.

463

464

### 465 *3.1 Coordination and control in transdisciplinary research processes*

466

467 As described earlier, the ProPoorGov project was initiated between an international  
468 organization and a research institute, and included only at a later stage a broader set of  
469 stakeholders. The fact that transdisciplinary projects rarely emerge as joint initiatives of  
470 all stakeholders has already been explored by earlier academic contributions [28, 50, 51].  
471 Indeed, initiative is often taken by scientists alone, who become responsible for engaging  
472 other actors more deeply connected to the practicalities of the issue. Therefore, as the  
473 literature states, one challenge in this regard is that researchers and practitioners can  
474 achieve unbalanced levels of ownership, which in turn can limit the transformative  
475 potential of transdisciplinary research.

476 In the case of the ProPoorGov project, an approach that favoured a balance between  
477 central coordination and flexibility was ultimately reached by the means of negotiations

478 conducted throughout almost the entire process. As described, the researchers operated  
479 with broad criteria for case selection and analytical framing. Furthermore, they generally  
480 acted flexibly and placed strong emphasis on discussion, deliberation, and joint  
481 agreements. However, they retained control over the research process as a whole, giving  
482 timelines, for example, and indicating general activities. This fact of retaining the  
483 authority and having a leading and coordinating role may jeopardize the claim of  
484 transdisciplinary projects of collaborating on an equal footing [47-49]. How equal can the  
485 collaboration really be in a situation in which a certain degree of authority is nevertheless  
486 evident? Joint leadership [52], i.e., coordination and control being ceded to stakeholders,  
487 has only partially been strived for in the project in question.

488         Certainly, there are different degrees of engagement and of ceding control. Brandt  
489 et al. [30], referring to Krütli et al. [53], for example, distinguish between four types of  
490 practitioners' engagement in transdisciplinary research, characterized by different  
491 intensities of their involvement. Namely, they cite i) information, ii) consultation, iii)  
492 'collaboration', and iv) empowerment. Collaboration is defined as participants having a  
493 'notable influence on the outcome', and empowerment as the case in which the authority  
494 to decide is given to practitioners. In addition, regarding the degree of involvement,  
495 interaction between, and authority transferred to actors, Mobjörk [8] suggests a  
496 qualitative difference between consulting and participatory transdisciplinarity. The  
497 participatory type would be achieved if actors could effectively engage in equal terms,  
498 actively contributing to knowledge co-generation and mutual learning.

499         Generally agreeing to the existence of gradual differences of involvement between  
500 the extremes pointed out by these authors, we further argue that instead of only one

501 notion, different levels of empowerment can be achieved without necessarily devolving  
502 full authority in the process. Even more importantly, we argue that initiating and  
503 controlling the research implies assuming a powerful position and thereby produces  
504 power asymmetries that might potentially prevent an equal footing. This is a relevant  
505 consideration often only marginally taken into account in transdisciplinary research  
506 literature.

507         As mentioned in section 2.1.2, access to decision-making processes was improved  
508 for civil society organizations in the frame of the ProPoorGov project. They also  
509 achieved greater recognition as meaningful contributors in the eyes of local and national  
510 policy makers and international organizations. Empowerment, in this sense, was  
511 achieved, even though decisive authority was not fully devolved, challenging  
512 classifications that disregard the different ways of achieving empowerment.

513         The second point in addressing the issue of ceding control in a transdisciplinary  
514 project goes beyond scholarly categorizations of practitioners' involvement, and  
515 questions the claim of being able to collaborate on an 'equal footing'. In the vast majority  
516 of transdisciplinary projects, researchers are the people who retain control over the basic  
517 phases of the process. The simple claim to work on an equal footing, based on an equal  
518 involvement in the process, we argue, negates and disguises this control and associated  
519 power with coordination roles. Different stakeholders necessarily bring their pre-existing  
520 power to the transdisciplinary process, creating a situation of power asymmetry. It could  
521 be argued that the transdisciplinary process, through its rules and procedures, tries to  
522 level the playing ground. Yet it is an open empirical question as to what extent the power  
523 asymmetries can effectively be attenuated during the process. The simple fact of



524 engaging different stakeholders under certain conditions alone falls short of addressing  
525 power imbalances, and taken alone does not lead to the claimed ‘equal footing’. Clearly,  
526 as a catchword and claim, ‘equal footing’ represents an ideal-typical construct that is  
527 certainly not completely achievable. In order to realistically engage with stakeholders –  
528 possibly striving for a normatively declared aim of altering the status quo – one has to  
529 acknowledge the existing power asymmetries instead of disguising them. This is of  
530 particular importance when it comes to how researchers position themselves in  
531 transdisciplinary research. We argue that no actor can ever be neutral, and therefore they  
532 need to be transparent and explicit about their positions, values, and judgements. This  
533 point is further elaborated in the following section.

534

### 535 *3.2 Criticism of scientific objectivity applied to transdisciplinarity*

536

537       When arguing against the excessively restricted notion of objectivity defended by  
538 those claiming a ‘neutral science’ conception of objectivity [25, p. 577-578], Harding  
539 suggests a couple of strategies in order to identify the hidden social assumptions that  
540 restrict scientific objectivity. She mentions these assumptions ‘... tend to be shared by  
541 observers designated as legitimate ones, and thus are significantly collective... values and  
542 interests, and ... tend to structure the institutions and conceptual schemes of disciplines’.  
543 By adopting strong objectivity, researchers would not negate the existence of these  
544 assumptions, quite the contract, they would reflect on how these influence and restrict the  
545 ‘identification and conceptualisation of scientific problems and the formation of  
546 hypotheses’. Thus, by identifying and reflecting on these social assumptions, strong

547 objectivity would assist on distinguishing ‘those values and interests that block the  
548 production of less partial and distorted accounts of nature and social relations... and  
549 those... that provide resources for it’.

550 In our understanding, there are clear correspondences between these arguments and  
551 the concept of reflexivity as proposed in transdisciplinarity [17]. As commented before,  
552 both reflectivity and strong objectivity draw our attention to the fact that these social  
553 assumptions are related to social positions and their derived power. Thus, one of the  
554 implications of acknowledging and critically reflecting on these assumptions that frame  
555 and constrain the formulation of research problems, hypotheses and methods is that, then,  
556 these should not be set a priori in the research phase. Instead, as a proposed procedure,  
557 transdisciplinarity invites researchers to jointly co-define the *problematique* in  
558 collaboration with the objects of knowledge, such as non-scientific stakeholders.  
559 Moreover, applied to transdisciplinary projects, strong objectivity and reflexivity<sup>2</sup>  
560 ‘forces’ scientists not to consider themselves as subjects of knowledge – i.e., external and  
561 disconnected observers of a given object of study – but also as objects of knowledge –  
562 scientists as real stakeholders, i.e., having a stake in the issue.

563 This calls for explicitly not attempting to do a ‘God trick’ (Harding), i.e., claiming  
564 neutrality and ‘weak objectivity’. Instead, it asks for an explicit and transparent self-  
565 positioning, more precisely for outlining the locatedness and the positions of the involved  
566 subjects of knowledge, in particular of the scientific stakeholders. It is somehow striking  
567 that although claiming a reconfiguration of the role of scientists in research processes as  
568 ‘epistemediators’ [50] or bridge makers between the worlds of science and practice [55],

---

<sup>2</sup> Reflexivity as conceptualized by Bourdieu is an epistemological precondition for sociological science. [54] P. Bourdieu, *Pascalian meditations*, Stanford University Press, Palo Alto, 2000.

569 transdisciplinary literature has rarely been addressing how social positions and pre-  
570 existent values of scientists themselves might influence the direction of the co-generation  
571 process. In the next part of the discussion section, we explore how the values and  
572 positions of the researchers involved in the ProPoorGov project indeed influenced the  
573 normative decision of approaching land governance with a pro-poor orientation.

574

### 575 *3.3 Adopting a pro-poor approach in transdisciplinarity: a rationale*

576

577 As indicated by standpoint theory, ‘taking sides’ when studying a given issue is  
578 unavoidable, given the social positions and pre-existing values held by stakeholders,  
579 including scientific ones. This certainly also applies to transdisciplinary research.  
580 However, instead of seeing it as a hindrance, we argue that transparently assuming a pro-  
581 poor position related to resource governance should be seen as an asset in  
582 transdisciplinary projects. We argue that research committed with ‘strong objectivity’  
583 could objectively contribute more realistic elements to pro-poor governance than research  
584 based on neutral but ‘weak objectivity’.

585 Standpoint theory not only provides a strong argument for making explicit  
586 researchers’ situatedness and positions when addressing a given object of study; it also  
587 provides an epistemological argument for choosing to address resource governance  
588 through a pro-poor approach. Consideration of the perspectives of marginal actors allows  
589 for a better understanding of social order and of the different structures that constrain the  
590 expression of their perspectives, and which impede their concerns from being considered  
591 in decision taking. Standpoint theory argues that one’s social situation enables and sets

592 limits on what one can know. Critically unexamined dominant positions are more  
593 limiting than others as they are unable to generate the most critical questions. Therefore,  
594 research shall take marginal lives as a starting point for examining human relations with  
595 each other and with the natural world. Researchers will thereby be able to produce less  
596 partial and distorted understandings. In this sense, marginal lives provide meaningful  
597 scientific problems and research agendas.

598         Certainly, assuming positions in transdisciplinary research has its implications. One  
599 worth mentioning relates to which stakeholders are invited to participate and collaborate  
600 in the joint exercise. In the case of the ProPoorGov project, as already described in the  
601 previous sections, the researchers and international organizations deliberately chose to  
602 invite only organizations working with and for poor rural groups. It could be argued that  
603 this selection does not represent a comprehensive set of actors that could have a stake in  
604 the governance of resources. This argument is valid in the sense that transdisciplinary  
605 research profits from diversity and plurality of perspectives and groups involved in the  
606 process. Nevertheless, this does not imply that transdisciplinary collaboration should try  
607 to achieve a proportional representation of the ‘real world’ when selecting stakeholders.  
608 Evidently, in the case of ProPoorGov project, the private sector, investors, local  
609 governments and others groups have primarily not been approached by the researchers  
610 and thus have participated much less in the process than actors who were known to be  
611 outspoken proponents of pro-poor approaches.

612         This biased selection was a deliberate decision. We argue that it represents an  
613 understanding of a problem-oriented composition of stakeholders for a research process,  
614 based on a ‘strong objectivity’ approach. Our aim was not a fully and comprehensive

615 deliberative process including all potential stakeholders, but rather a transdisciplinary  
616 exploration of several cases of resource governance, starting off from marginal lives but  
617 including a variety of perspectives. The perspectives of marginalized groups are  
618 structurally underrepresented in governance processes and it is a well-known problem of  
619 transdisciplinary processes that disadvantaged stakeholders do not have the resources –  
620 time, money, professional assistance, in some cases proficiency in English, among others  
621 constraints – to participate and often are intimidated to speak up in such settings [56].

622         The ProPoorGov project aimed at jointly documenting and analysing cases of  
623 importance to marginalized groups and resource governance in general, specifically  
624 emphasising their perspective, yet not naively assuming the positions of those  
625 collaborating CSOs or marginalized groups but exposing and balancing it with other  
626 views. A broader deliberative process with a more comprehensive set of stakeholders was  
627 not within the scope of the project, as this would have requested substantially more time  
628 and funds. Nevertheless, points of view and perspectives were very diverse even within  
629 the “pro-poor” frame adopted, certainly enriching the transdisciplinary collaboration and  
630 its goals of co-producing knowledge. This reflected the different missions and scale the  
631 participating organisations had, for instance the differences between international and  
632 more local organisations, or between CSOs more focused in policy advocacy and others  
633 focused on supporting smallholder farmers in field activities. Furthermore, in most cases,  
634 the research provided a trigger and starting point for more comprehensive discussions  
635 with other stakeholders within regional and national levels, in the sense that research  
636 results were used by the collaborating CSOs in other debates and negotiations or taken up  
637 by relevant government authorities. In this sense, transdisciplinarity based on ‘strong

638 objectivity' rather aims at strengthening the silences or marginalized voices in the  
639 governance process.

640 Finally, it is important to stress that opting to transparently assume a normative  
641 position does not signify blind agreement with all positions brought to the  
642 transdisciplinary dialogue; in fact, the reality is quite the contrary. An important  
643 component of transdisciplinarity refers to the instigation of self-reflection for all  
644 stakeholders, which in turn can generate mutual learning processes. In the ProPoorGov  
645 project this required intensive dialogue and negotiation over contested issues and  
646 positions. By being transparent and not hiding behind the neutrality label, scientists avoid  
647 simply reproducing statements. It is through these intense dialogues and occasions  
648 triggering self-reflexivity that actors are susceptible to reconsider their values and  
649 opinions, mutual learning takes place, and new knowledge is co-generated. As indicated  
650 by Bird referring to Weber [12], there *always* exist value judgements in science.  
651 Reaching objectivity requires not only making these transparent and accessible, but also  
652 necessitates submitting those judgements to an open and rational debate. We understand  
653 that this holds true for transdisciplinary research as much as it does for other scientific  
654 approaches.

655

#### 656 **4. Conclusion**

657

658 The analysis and design of the implementation of the transdisciplinary research  
659 project 'Pro-Poor Resource Governance under Changing Climates' revealed two  
660 important challenges. First, the question of how much control is ceded in a

661 transdisciplinary process was found to be crucial in the sense that it affects the power  
662 balance between the stakeholders. Second, disagreements between researchers and civil  
663 society organizations occurred in relation to specific aspects of how to carry out the  
664 research. Although scientific and non-scientific actors shared a common goal and a given  
665 set of values towards how resource governance should be transformed, these slight  
666 divergences clearly represented different perspectives on the issue.

667         Contrasting with other transdisciplinary projects described in the literature, the  
668 complete devolution of authority to practitioners in the process was never strived for. We  
669 argued that initiating and controlling the process implied assuming a powerful position,  
670 and thus generated asymmetries that might potentially prevent an equal footing.  
671 Nevertheless, it was argued that the empowerment of civil society organizations has been  
672 achieved without fully ceding authority. This was only possible using an approach that  
673 favoured a balance between central coordination and flexibility, under which negotiations  
674 were conducted throughout the entire process. The question of control and its  
675 implications for power balances in the process have only marginally been touched upon  
676 in the transdisciplinary literature. The fact of engaging different stakeholders alone falls  
677 short of addressing power imbalances, and does not lead to a claim of equal footing.

678         This is of particular importance when it comes to how researchers position  
679 themselves in such collaborations. It was argued that epistemological debates around  
680 scientific objectivity could provide a number of insights as to how to deal with the  
681 different positions. Standpoint theory shows that everybody has a specific social  
682 situatedness that both enables and limits what one can know. Feminist authors in  
683 particular have called for a 'strong objectivity' that requires the explicit and transparent

684 positioning of oneself: this also holds true for scientists. Furthermore, standpoint theory  
685 provides an argument for not only making researchers' situatedness explicit, but also for  
686 choosing to address resource governance from a pro-poor approach. Starting research  
687 from marginal actors allows for a better understanding of the social order and the  
688 structures that constrain their expression.

689         Given the potential for societal transformation usually associated with the  
690 transdisciplinary approach, power dimensions associated with researchers' control and  
691 standpoints, surprisingly, have rarely been explicitly discussed in transdisciplinary  
692 literature. Relating to the objectivity question and fulfilling the standards of 'strong  
693 objectivity' might generate less partial accounts of contested issues such as resource  
694 governance in future transdisciplinary studies.

695

696

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840 **Table 1. Project Partners: Civil Society Organizations**

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	Name	Short description
Bangladesh	BRAC	BRAC is a development organization dedicated to alleviating poverty through empowering the poor. Founded in Bangladesh in 1972, BRAC activities now cover the whole country. Their programme includes agriculture and food security, microfinance, education, health, legal empowerment and social enterprises among other areas. More concretely, a case study has been carried out in collaboration with BRAC's research and evaluation division (RED), an independent research unit within the framework of the organization. The division has been playing an important role in designing BRAC's development interventions, monitoring progress, documenting achievements, and undertaking impact assessment studies. <a href="http://www.brac.net">www.brac.net</a>
Bolivia 1	Fundación Tierra	Fundación Tierra is a Bolivian non-governmental organization (NGO) dedicated to discussing ideas and developing proposals for the rural sustainable development of indigenous, native and peasant groups. With more than 20 years of experience, Fundación Tierra works through action research and aims to influence policy in Bolivia in favour of marginalized and excluded rural populations. It supports indigenous, native and peasant groups by building capacities in management, negotiation, participation and policy incidence. Fundación Tierra research areas include agrarian issues, food security, indigenous rights, democracy and local governance, and the applied action research methodologies favour strong involvement of communities at the local level. <a href="http://www.ftierra.org">www.ftierra.org</a>
Bolivia 2	CDE, Faculty of Agronomy/UMSA La Paz and Fundación PIAF- El Ceibo	The Centre for Development and Environment (CDE) is an interdisciplinary research centre of the University of Bern, Switzerland. CDE's overarching goal is to produce and share knowledge for sustainable development cooperation with partners in the global north and south. Under the scope of this research, CDE has collaborated with the Faculty of Agronomy of the Universidad Mayor de San Andrés (UMSA), situated in La Paz, and with Fundación PIAF-El Ceibo. <a href="http://www.cde.unibe.ch">www.cde.unibe.ch</a> Fundación PIAF was created by the Central do Cooperatives El Ceibo as a non-profit organization serving the needs of cooperates and their families. One of its main activities consists of providing technical assistance and fostering knowledge sharing among cocoa producers of Alto Beni. The foundation is also responsible for monitoring compliance with organic agriculture standards, for providing micro-credit and for managing social support, such as health, education and retirement programmes. <a href="http://www.elceibo.org">www.elceibo.org</a>
Brazil	PATAC	PATAC ( <i>Programa de Aplicação de Tecnologias Apropriadas às Comunidades</i> ) is a civil society organization with over 40 years of history aimed towards the strengthening of family farming in semi-arid Brazil.

		In direct cooperation with local family farming organizations, PATAC promotes sustainable rural development in the State of Paraíba, the Brazilian Northeast, through the dissemination of agroecological practices and the use of participative and bottom-up processes. PATAC supports use of local and original biodiversity, adapted to the conditions of the environment, and supports small-scale, low cost technologies to conserve and store water, forage and native needs. PATAC's intervention methods favour reinforcement of local knowledge and community-driven sustainable development. <a href="http://patacparaiba.blogspot.de/p/patac.html">http://patacparaiba.blogspot.de/p/patac.html</a>
Burkina Faso	GRAF	GRAF ( <i>Groupe de Recherche et d'Action sur le Foncier</i> ) is a non-profit organization founded in 1999 and a member of LandNet West Africa. GRAF is a network of people interested in land issues such as conflicts and acquisitions, decentralization, and governance of natural resources. The organization focuses on research, capitalization, publication, and advocacy. GRAF aims at conducting research on land issues at the local level, involving all stakeholders in a genuine national debate on the political and legal options regarding land, and acknowledging and using local expertise. Striving for the diversification of perspectives, analyses, and proposals, GRAF gathers researchers, practitioners, and decision makers. In past years, GRAF has received significant attention and has been involved in governmental processes. <a href="http://www.graf-bf.org">www.graf-bf.org</a>
Ecuador	SIPAE	SIPAE ( <i>Sistema de Investigación de la Problemática Agraria en el Ecuador</i> ) is a research network working on agrarian policies at the local and national level. It operates a platform for action-research development, fostering social dialogues, elaborating political proposals, and connecting scientific investigation with social movements dealing with rural and agrarian problems. SIPAE's mission includes the support of a socially and environmentally sustainable agriculture, in defence of food sovereignty and collective economic, social, cultural, and labour rights. It aims to contribute to different research efforts, articulating and complementing new knowledge in rural and agrarian topics. <a href="http://www.sipae.com">www.sipae.com</a>
India	Seva Mandir	Seva Mandir is an Indian non-profit organization founded in 1968 that has been working for 40 years with the rural, predominantly tribal population in the Udaipur district of Southern Rajasthan. SevaMandir's work centres on efforts to strengthen the sense of collectivity and cooperation among communities with the goal of improving social equity and increasing resilience to climate change. The organization carries out activities in 626 villages and 56 urban settlements. Seva Mandir supports communities in the (re)establishment of common lands through negotiations that are often prolonged to free it from privatisation and development and to protect the degraded lands and put equitable benefit sharing mechanisms in place. <a href="http://www.sevamandir.org">www.sevamandir.org</a>

842 *Source:* Authors' field data and organizations' websites.

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