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THE CULTURAL AND GENDER
CONTEXT IN TERRITORIAL
DEVELOPMENT: EXCLUDED
COMMUNITIES AND ACCESS TO
SCARCE RESOURCES

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Núcleo Milenio para
el Desarrollo Integral
de los Territorios



CULTURE AND DEVELOPMENT/WELLBEING

- There are differences in the ways in which we think about space and wellbeing, depending on the culture
- Cultural differences establish different values for elements typically considered wellbeing indicators. E.g., water as a live element or viewed as a natural resource
- Different values are culturally embedded, and they establish different courses of action in the face of centralized public policies and actions.
- Taking them into account can improve significantly the design and monitoring of public policies
 - They can stop or difficult application, follow-up, monitoring, and the results
 - E.g., controversy about policies regarding channel lining in a drought and water scarcity context
- Different cultures and views imply knowledge about the territory and means of production that are deeply rooted in the context.
 - E.g., traditional practices to protect seeds resistant to pests can help in designing of agrifood system policies



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Primer Concurso Nacional de Riego para Mujeres 2023

En el marco del Plan Chile Para Todas y con la finalidad de dar mayor acceso y equidad a las agricultoras que buscan mejorar su desarrollo productivo, la Comisión Nacional de Riego inició el proceso de postulación al "Primer Concurso Nacional de Riego para Mujeres". del Calendario

GENDER APPROACH FOR LOCAL DEVELOPMENT

- Gender gaps can be reduced using the 'usual' approach
- However, gender sensitive policies can improve results in contexts of poverty (e.g., Bastos et al. 2009)
- In issues related to environment, women tend to remain in their territories. Despite their vulnerability, women remain in charge of their families as protectors.
- Gender-blind policies do not recognize intersectionality of inequality. This is, different attributes interact and strengthen each other to establish traps not easy to overcome. One of these cases is women-rural-indigenous.





INDAP'S PRODUCTIVE ALLIANCES

- PAP promotes alliances between small farmers and larger companies
- Idea is to cut the middlemen and create a long-term relationship, so that small farmers can improve production (training) and managerial skills, access to market, increase income
- The program does not have a gender/cultural approach
- However, women are particularly benefited as the program has provided them with a platform to increase associativity and to make a living out of their business. They can move from 'helping' in generating income, to become the main income earner in the family.
- It is not clear whether this is causal or just that highly motivated women benefit more.
- Highly successful small farmers continue in the program. This could affect women (As if they have all started from the same place)

DROUGHT, WATER SCARCITY AND REORGANIZATION OF LABOR. THE CASE OF INDIGENOUS WOMEN IN CHILE

- Climate change is one of the most pressing global problems
- The vulnerability to climate change in local communities is increasing
- This vulnerability is also related to the reproduction and increase of several inequalities
- Poorer communities are the ones who experience its impacts the most
 - Largely excluded from decision making process
 - Women and indigenous groups among the most affected (Brugnach et al. 2017).

- 
- Weather shocks, such as changes in temperature, rainfall, and windstorms, affect agricultural and industrial output, labor productivity, health, and conflict, among other variables (Dell et al. 2014).
 - Rainfall variability decreases agricultural output (Damania et al. 2020), agricultural wages (V.A. Mueller and Osgood 2009; V. Mueller and Quisumbing 2011), local tax revenues (Sanoh 2015), and increases food prices and vulnerability to poverty (Hill and Porter 2017).
 - Increases outmigration (Baez et al. 2017) and farm households' labor supply in non-agricultural sectors, with diversification of activities operating as a mitigation and adaptation strategy (Branco and Féres 2021).

- 
- Impacts are not homogenous, affecting women and indigenous groups more: Differential impacts on wages (Mahajan, 2017) & employment (Feeny et al. 2021) for women; Reduction in educational attainment and increase in child labor among indigenous groups (Nordman et al. 2022; Pham 2022).
 - For the case of Chile, recent qualitative research has shown that changes in water availability and governance particularly impact the daily lives of Mapuche women (Bravo and Fragkou 2019).
 - Literature, especially for LA & Chile, is very limited.



During the last decade, Chile has faced one of the longest and most extensive droughts in its history, which has impacted the replenishment of aquifers, basins, and general water availability (Cr2 2015).

Agriculture and forestry accounts for 73% of consumptive water use.

Water rights (privatized in the 80s) assigned to well-informed actors; indigenous communities were basically excluded from the process.

Not only a mega drought, but also water rights in the hands of a few



RESEARCH QUESTIONS

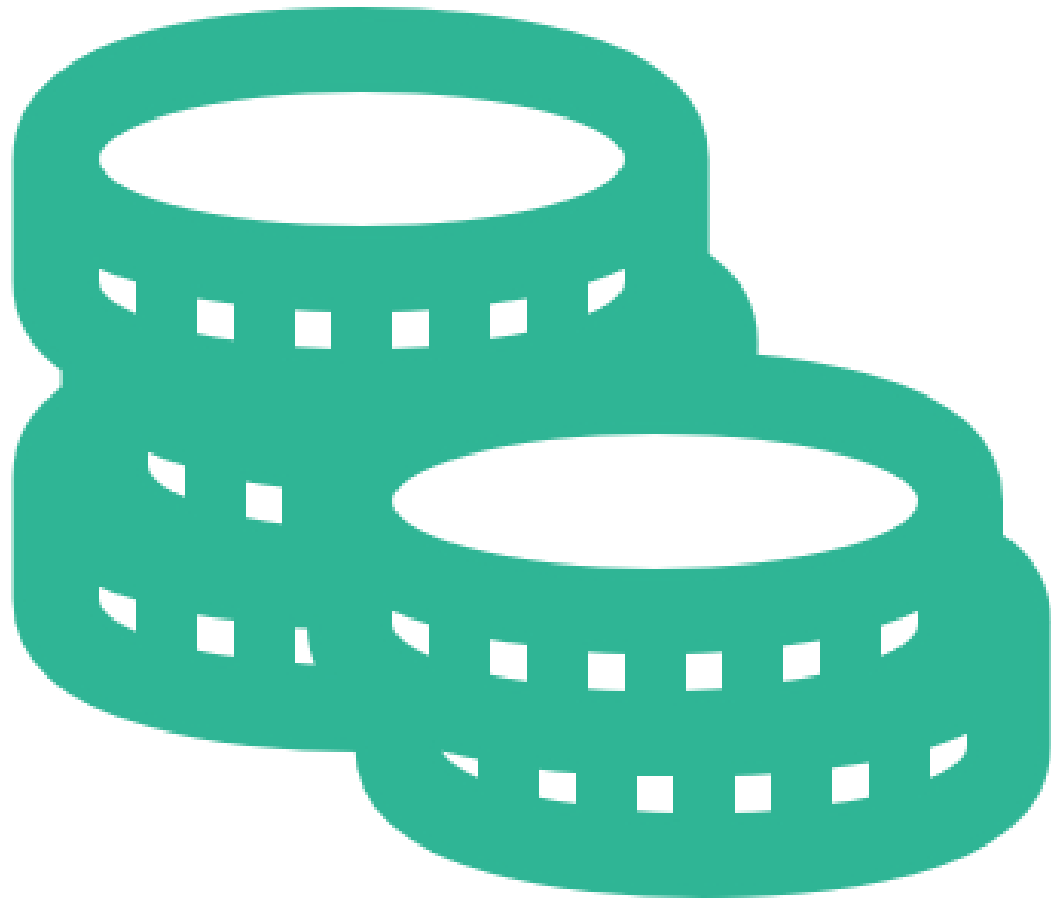
What are the impacts of droughts and water scarcity on wages, employment and migration in Chile?



Are these impacts homogenous, or do they affect some groups (i.e., indigenous women) more?



If they do impact indigenous women more, why? What are the mechanisms?



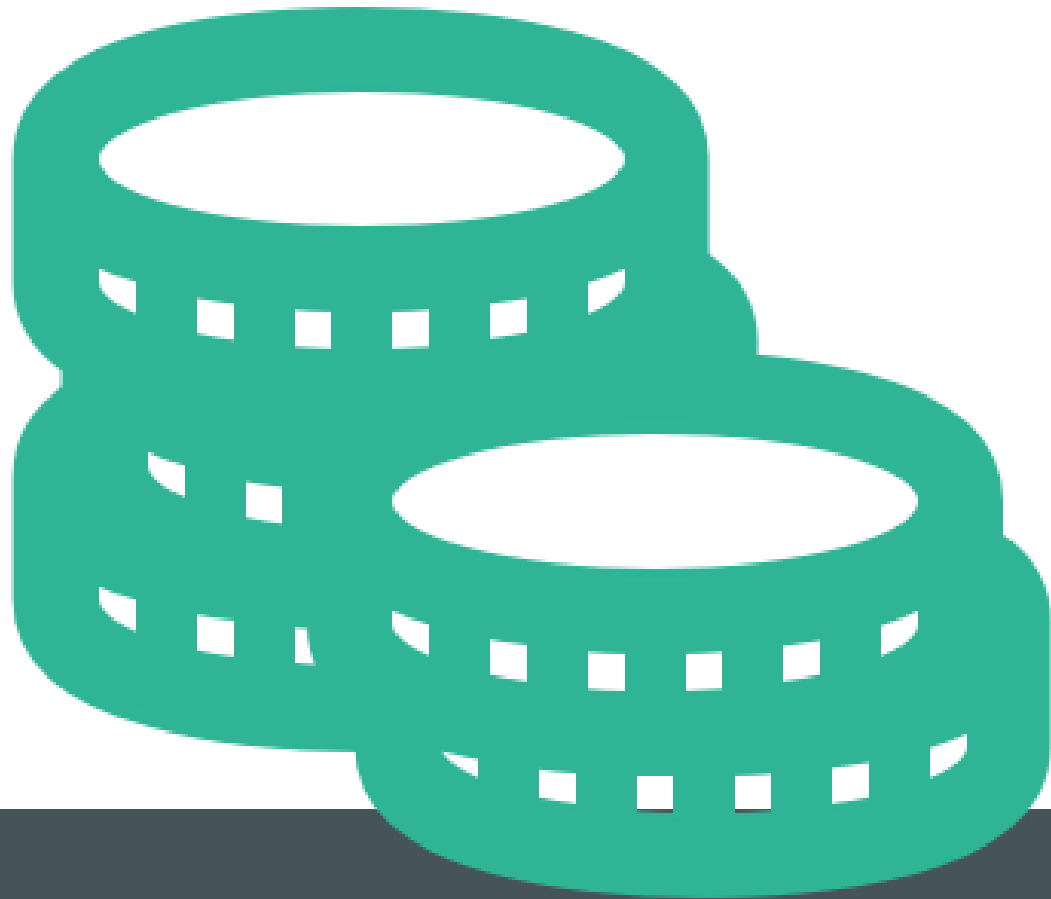
EFFECTS ON
INCOME

	Whole Country		North		South	
	All	Ag. Workers	All	Ag. Workers	All	Ag. Workers
Drought = 1	0.00540 (0.00990)	-0.00269 (0.0148)	0.0150 (0.0323)	0.148*** (0.0533)	-0.0222*** (0.00828)	-0.0670*** (0.0202)
Schooling (years)	0.0923*** (0.00230)	0.0611*** (0.00165)	0.0811*** (0.000677)	0.0467*** (0.00144)	0.0908*** (0.000349)	0.0658*** (0.000753)
Age (years)	0.0139*** (0.000342)	0.00930*** (0.000302)	0.0126*** (0.000185)	0.00811*** (0.000408)	0.0132*** (0.000103)	0.00930*** (0.000210)
Married = 1	-0.124*** (0.00358)	-0.158*** (0.00712)	-0.131*** (0.00425)	-0.138*** (0.00875)	-0.129*** (0.00239)	-0.184*** (0.00482)
Mining = 1	0.451*** (0.0185)		0.462*** (0.00723)		0.366*** (0.0155)	
Manufacturing = 1	0.00738 (0.0109)		0.0301*** (0.0104)		0.0105** (0.00413)	
Services = 1	0.0831*** (0.00905)		0.120*** (0.00558)		0.0796*** (0.00302)	
Self-employed = 1	-0.817*** (0.0190)	-0.947*** (0.0349)	-0.741*** (0.0212)	-0.768*** (0.0470)	-0.845*** (0.0103)	-1.016*** (0.0224)
Salaried = 1	-0.849*** (0.0241)	-1.072*** (0.0338)	-0.793*** (0.0206)	-0.956*** (0.0461)	-0.842*** (0.00999)	-1.059*** (0.0220)
Military = 1	-0.444*** (0.0372)		-0.417*** (0.0343)		-0.409*** (0.0133)	-0.849*** (0.132)
Domestic Work = 1	-1.199*** (0.0233)		-1.173*** (0.0234)		-1.206*** (0.0113)	-1.173*** (0.107)
Rural = 1	-0.0153** (0.00666)	-0.0561*** (0.00981)	-0.0602*** (0.00490)	-0.0816*** (0.00854)	-0.0140*** (0.00262)	-0.0622*** (0.00472)
Woman = 1	-0.286*** (0.00405)	-0.275*** (0.0113)	-0.299*** (0.00469)	-0.195*** (0.0101)	-0.282*** (0.00263)	-0.332*** (0.00662)
Indigenous = 1	-0.0657*** (0.00735)	-0.124*** (0.0135)	-0.0291*** (0.00855)	-0.0295 (0.0181)	-0.0816*** (0.00337)	-0.129*** (0.00616)
Constant	11.21*** (0.0399)	11.93*** (0.0380)	11.26*** (0.0333)	11.71*** (0.0724)	11.09*** (0.0196)	11.57*** (0.0376)
Observations	1,095,255	257,775	117,239	25,954	453,265	131,004
R-squared	0.433	0.339	0.461	0.378	0.394	0.321

	Chile	North	South
Drought = 1	-0.000345 (0.0103)	0.0287 (0.0210)	-0.0234** (0.0114)
Women = 1	-0.288*** (0.00406)	-0.290*** (0.0108)	-0.288*** (0.00652)
Drought*Woman	0.0146* (0.00783)	0.00827 (0.0197)	0.0227** (0.0113)
Schooling (years)	0.0923*** (0.00230)	0.0830*** (0.00313)	0.0904*** (0.00213)
Age (years)	0.0139*** (0.000343)	0.0125*** (0.000412)	0.0132*** (0.000311)
Married = 1	-0.124*** (0.00358)	-0.135*** (0.00577)	-0.130*** (0.00522)
Mining = 1	0.451*** (0.0185)	0.451*** (0.0283)	0.387*** (0.0420)
Manufacturing = 1	0.00750 (0.0109)	0.0162 (0.0297)	0.0104 (0.0119)
Services = 1	0.0832*** (0.00905)	0.0912*** (0.0217)	0.0806*** (0.0119)
Self-employed = 1	-0.817*** (0.0190)	-0.701*** (0.0504)	-0.848*** (0.0236)
Salaried = 1	-0.849*** (0.0241)	-0.726*** (0.0709)	-0.847*** (0.0286)
Military = 1	-0.444*** (0.0372)	-0.280** (0.119)	-0.419*** (0.0322)
Domestic Work (Employed) = 1	-1.199*** (0.0232)	-1.112*** (0.0608)	-1.204*** (0.0305)
Rural = 1	-0.0152** (0.00666)	-0.0454*** (0.0158)	-0.00980 (0.00839)
Indigenous = 1	-0.0657*** (0.00735)	-0.0508*** (0.0158)	-0.0812*** (0.00839)
Constant	11.21*** (0.0399)	11.25*** (0.0715)	11.10*** (0.0497)
Observations	1,095,255	198,042	499,295
R-squared	0.433	0.438	0.387

	Chile	North	South
Drought = 1	0.00545 (0.00969)	0.0417** (0.0184)	-0.0135 (0.0120)
Indigenous = 1	-0.0657*** (0.00692)	-0.0442*** (0.0142)	-0.0801*** (0.00874)
Drought*Indigenous	-0.000390 (0.0169)	-0.0650*** (0.0224)	-0.0104 (0.0131)
Schooling (years)	0.0923*** (0.00230)	0.0830*** (0.00313)	0.0904*** (0.00213)
Age (years)	0.0139*** (0.000342)	0.0125*** (0.000411)	0.0132*** (0.000311)
Married = 1	-0.124*** (0.00359)	-0.135*** (0.00577)	-0.130*** (0.00522)
Mining = 1	0.451*** (0.0185)	0.451*** (0.0283)	0.387*** (0.0420)
Manufacturing = 1	0.00738 (0.0109)	0.0163 (0.0297)	0.0102 (0.0119)
Services = 1	0.0831*** (0.00905)	0.0913*** (0.0216)	0.0804*** (0.0119)
Self-employed = 1	-0.817*** (0.0190)	-0.701*** (0.0505)	-0.848*** (0.0236)
Salaried = 1	-0.849*** (0.0241)	-0.726*** (0.0710)	-0.847*** (0.0286)
Military = 1	-0.444*** (0.0372)	-0.280** (0.119)	-0.419*** (0.0322)
Domestic Work (Employed) = 1	-1.199*** (0.0233)	-1.112*** (0.0608)	-1.204*** (0.0306)
Rural = 1	-0.0153** (0.00666)	-0.0454*** (0.0159)	-0.00985 (0.00840)
Woman = 1	-0.286*** (0.00405)	-0.289*** (0.00999)	-0.285*** (0.00656)
Constant	11.21*** (0.0399)	11.25*** (0.0710)	11.10*** (0.0498)
Observations	1,095,255	198,042	499,295
R-squared	0.433	0.438	0.387

	Chile	North	South
Drought = 1	-0.00140 (0.00998)	0.0365* (0.0195)	-0.0245** (0.0113)
Women = 1	-0.291*** (0.00401)	-0.300*** (0.00952)	-0.291*** (0.00682)
Indigenous = 1	-0.0751*** (0.00748)	-0.0724*** (0.0150)	-0.0875*** (0.00960)
Woman*Indigenous	0.0257** (0.0102)	0.0677*** (0.0205)	0.0223* (0.0120)
Drought*Woman	0.0176** (0.00828)	0.0135 (0.0230)	0.0291** (0.0114)
Drought*Indigenous	0.00930 (0.0192)	-0.0601* (0.0296)	0.00729 (0.0158)
Drought*Woman*Indigenous	-0.0264 (0.0215)	-0.0166 (0.0588)	-0.0494** (0.0234)
Schooling (years)	0.0923*** (0.00230)	0.0831*** (0.00313)	0.0904*** (0.00213)
Age (years)	0.0139*** (0.000342)	0.0125*** (0.000412)	0.0132*** (0.000310)
Married = 1	-0.124*** (0.00358)	-0.135*** (0.00581)	-0.130*** (0.00521)
Mining = 1	0.451*** (0.0185)	0.450*** (0.0285)	0.387*** (0.0420)
Manufacturing = 1	0.00721 (0.0109)	0.0162 (0.0298)	0.0101 (0.0119)
Services = 1	0.0830*** (0.00904)	0.0917*** (0.0216)	0.0805*** (0.0118)
Self-employed = 1	-0.817*** (0.0191)	-0.701*** (0.0505)	-0.848*** (0.0236)
Salaried = 1	-0.848*** (0.0241)	-0.726*** (0.0710)	-0.847*** (0.0286)
Military = 1	-0.444*** (0.0371)	-0.281** (0.119)	-0.419*** (0.0322)
Domestic Work (Employed) = 1	-1.199*** (0.0233)	-1.110*** (0.0608)	-1.204*** (0.0305)
Rural = 1	-0.0151** (0.00666)	-0.0449*** (0.0160)	-0.00974 (0.00838)
Constant	11.21*** (0.0399)	11.25*** (0.0711)	11.10*** (0.0497)
Observations	1,095,255	198,042	499,295
R-squared	0.433	0.438	0.387



EFFECTS ON EMPLOYMENT

	Agriculture	Unpaid	Unemployed	Out of labor
Drought = 1	-0.0140*** (0.00162)	0.00372*** (0.000334)	0.000708 (0.00111)	0.0235*** (0.00152)
Women = 1	-0.105*** (0.000749)	0.0112*** (0.000258)	0.0237*** (0.000601)	0.370*** (0.000700)
Indigenous = 1	0.0476*** (0.00164)	0.00324*** (0.000442)	0.00114 (0.00105)	-0.0139*** (0.00141)
Woman*Indigenous	-0.0487*** (0.00235)	0.00133 (0.000863)	0.00519*** (0.00179)	0.00506** (0.00205)
Drought*Woman	0.0478*** (0.00209)	-0.00589*** (0.000556)	-0.00651*** (0.00173)	-0.0528*** (0.00217)
Drought*Indigenous	-0.00410 (0.00506)	0.000674 (0.00147)	-0.00109 (0.00324)	-0.0167*** (0.00438)
Drought*Woman*Indigenous	-0.0160** (0.00730)	0.00256 (0.00269)	0.00192 (0.00560)	0.0227*** (0.00668)
Schooling (years)	-0.0220*** (9.80e-05)	-0.000504*** (2.47e-05)	-0.00308*** (6.59e-05)	-0.0184*** (8.87e-05)
Age (years)	-0.000913*** (2.94e-05)	-0.000132*** (8.22e-06)	-0.00304*** (2.23e-05)	-0.00317*** (2.78e-05)
Married = 1	0.00997*** (0.000709)	0.00158*** (0.000202)	0.0404*** (0.000528)	0.0220*** (0.000680)
Rural = 1	0.304*** (0.00104)	0.00890*** (0.000262)	-0.0235*** (0.000606)	0.0297*** (0.000782)
Constant	0.396*** (0.00344)	0.0260*** (0.00126)	0.171*** (0.00269)	0.469*** (0.00375)
Observations	1,127,391	1,132,552	1,231,875	1,913,033
R-squared	0.325	0.013	0.041	0.179



CONCLUSIONS

- There are important differences in the impacts produced by a certain event within a country, depending on the context and gender of the individual
- We need to do more to understand why these differences occur
- In our study: Indigenous women in Chile, on average, have significantly lower labor force participation, incomes, and years of schooling compared to both indigenous men and non-indigenous women.
- Droughts appear to exacerbate this gap, increasing inequality and indigenous women's vulnerability, because, as can be seen from the results of qualitative research, droughts usually involve the reorganization of the women domestic work, buying water or getting used to water cuts and reorganizing their consumption and activities such as bathing and washing clothes and dishes.
- Those who have their own well rely on the water trucks in the summer for supply, which according to interviewees, significantly modifies their daily routine. They go to the river to bathe and wash instead of doing so at home, they stop cultivating or reduce the size of their vegetable garden to adapt to the amount of water available, or, once or twice a week, they must fetch water from the river, located some 5 kilometers or more from their land.
- These changes in routine are faced only by the women in the household, significantly increasing their unpaid workload, something largely corroborated by the quantitative analysis performed here.