**[Natalia Alvial](https://psu.instructure.com/courses/2415050/users/7269798)**

Sep 26 12:12pm

Reply from Natalia Alvial

This paper offers a compelling critique of how livestock biodiversity is conceptualized and governed within science and policy in India. At the heart of the author's argument is a rejection of the dominant linear model of science-policy interaction -where science identifies problems and policy implements solutions- in favor of a more iterative, co-constructed, and politically mediated model. Dey situates this analysis within the case of India’s livestock sector, where increasing yields through crossbreeding has simultaneously driven dairy sector growth and triggered the erosion of indigenous breeds.

A central question raised by the paper is: Whose interests are being served in the current livestock conservation agenda? While scientific institutions and government bodies accrue international legitimacy and funding through conservation efforts, the pastoral and agroecological knowledge of local communities remains largely peripheral. This is especially problematic considering that herders and pastoralists have historically conserved diverse livestock breeds, not only for economic utility, but for cultural, nutritional, and ecological reasons.

Dey argues persuasively for a participatory model of livestock conservation, in which local knowledge interacts meaningfully with scientific expertise. Such a shift would move conservation beyond technocratic and productivist paradigms toward a framework grounded in pluralistic values and ecosystem interdependencies. This reflects concerns about how knowledge is produced, validated, and mobilized within governance systems.

One of the paper’s most significant contributions lies in its use of agenda-setting theory to examine science-policy relationships. Rather than assuming that science passively informs policy, Dey shows how scientific institutions actively shaped the problem of declining livestock diversity, first through defining the loss in economic terms, and later by proposing technological solutions. This re-framing enabled the convergence of political will and technical feasibility, opening a policy window for indigenous breed conservation. However, the resulting interventions such as the NBAGR’s remain rooted in a "breed-centric" logic focused on productivity and utility genes, rather than broader agroecological systems or cultural relationships.

The paper also foregrounds the conceptual narrowing of biodiversity. While biodiversity is defined as variability within species, between especies and ecosystems (United Nations, 1992), in practice, livestock biodiversity is reduced to genetic traits of registered breeds. Ecosystem relationships are largely absent. This reductionism reflects the dominance of technoscientific rationalities within both animal science and policy and underscores the limitations of institutionalized conservation approaches.

From a One Health perspective, the widespread use of exotic breeds across species (cattle, sheep, pigs, poultry, etc.) increases vulnerability to zoonotic spillovers and undermines systemic resilience. This underscores the urgent need for conservation strategies that integrate health, ecological, and cultural dimensions of agrobiodiversity.

Reading this paper from the vantage point of Chile raises important comparative reflections. In my country, while there are notable efforts to conserve wildlife, indigenous or local breeds remain largely invisible within formal conservation frameworks. For instance, the *Mapuche chicken*, a unique genetic resource, is not part of any national conservation program. The absence of institutional support contrasts sharply with India’s relatively extensive infrastructure, including the NBAGR and a national livestock gene bank. While the paper rightly critiques India’s technocratic orientation, it is also worth acknowledging that many countries lack even these basic institutional capacities.  
In that sense, India’s achievements (breed documentation, gene banking, and the development of policy instruments) represent an important, if partial, success. The challenge now lies in expanding the scope of conservation beyond genetic utility, to include the social, ecological, and cultural systems that sustain livestock diversity. This calls for a deeper integration of pastoralist knowledge, local breeding practices, and ecosystem-based governance.

Finally, the paper challenges us to rethink not only how biodiversity is defined, but also how knowledge itself is produced and legitimized within science. It pushes us to move beyond office-based or purely technocratic approaches and to imagine models of co-production that reflect the plural, lived realities of agrobiodiversity… realities grounded in fields, communities, and ecosystems.

***Discussion Question***  
•    In what ways does India’s approach to livestock biodiversity reflect broader global trajectories of agricultural development and conservation (e.g: the Green Revolution, neoliberal globalization)? To what extent can national institutions like NBAGR genuinely reshape these productivist pressures, or are they structurally bound to reproduce them?  
•    Can we really talk about biodiversity conservation without addressing the relationships between animals, plants, ecosystems, herders, and peasant communities who co-produce and sustain these systems?

* Reply to post from Natalia Alvial**Reply**
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**Deleted by Anonymous 1hh6if**

Deleted Sep 27 12:03pm

[**Faisal Elias**](https://psu.instructure.com/courses/2415050/users/7210136)

Sep 27 12:03pm| Last edited Sep 28 9:28am

Reply from Faisal Elias

The true value of Bravo-Peña & Yoder’s review lies in its systematic dissection of academic “buzzwords” that, despite their popularity, often lack analytical rigor. The paper demonstrates how terms like resilience and agrobiodiversity can obscure more than they reveal when applied without clear definitions and context-appropriate measures. It moves the conversation from a simple, ideological assumption, that diversification is inherently good, to a more nuanced, evidence-based inquiry into when, where, and for whom it is beneficial.

The authors’ emphasis on context is particularly powerful when applied to the term “smallholder” itself. As the review points out, this term is not a monolith but instead masks immense diversity in production goals, market linkages, and vulnerabilities. A diversification strategy that enhances the food security of a subsistence farmer with poor market access might be an economically irrational choice for a commercially oriented farmer whose resilience is tied to income and market stability. This highlights a fundamental tension often ignored in policy: the trade-offs between different forms of resilience. The finding that strategies promoting ecological resilience (e.g., traditional agroforestry) can undermine economic resilience (e.g., lower yields) is a critical insight. It reveals that promoting one form of resilience without acknowledging its potential cost to another can be counterproductive.

Furthermore, the review sheds light on how the challenge of operationalizing concepts can lead to researcher bias. The observation that studies focusing on ecological variables tend to find positive outcomes while those focusing on economic indicators often report negative ones is telling. It suggests that a researcher’s choice of metrics can steer the results, potentially reflecting a pre-existing agenda more than an objective reality. This is a crucial critique of the research process itself, cautioning that how we choose to measure a phenomenon can predetermine what we find.

Beyond its critique, the article is also constructive. It concludes by proposing an integrated framework for future research that directly addresses the conceptual confusion it identifies. By urging researchers to be explicit about the core elements of their analysis, defining the purpose of resilience (resilience of what, for whom, and to what?), the system being analyzed, and the capitals being measured, the framework provides a path toward greater clarity, rigor, and comparability in future studies. This structured approach is precisely what is needed to bring discipline to a field where ambiguous but popular concepts often dominate discourse. In doing so, Bravo-Peña & Yoder provide an invaluable service, pushing the field toward a more mature and effective understanding of how to build genuine resilience in smallholder agricultural systems.

**Discussion questions**

1. The review highlights a major gap between the theoretical concept of resilience and the simplified variables often used to measure it (e.g., crop count, net income). How might this “measurement gap” create misleading agricultural policies, and what are the potential risks for smallholder farmers if a government or NGO promotes a diversification strategy based on an incomplete or biased understanding of resilience?
2. The findings show a frequent trade-off: strategies that enhance ecological resilience can reduce economic resilience (e.g., lower yields). If you were a development practitioner advising a community, how would you approach this dilemma? Whose definition of a resilient outcome should be prioritized—the individual farmer seeking immediate income stability, or a state agency focused on long-term ecosystem services and agrobiodiversity conservation?
3. The review strongly concludes that the relationship between agrobiodiversity and resilience is context-dependent, and that smallholder is not a monolithic group. Given this, is it realistic to design effective, large-scale policies that promote diversification? Or does the importance of context mean that successful interventions can only be hyper-local and participatory, fundamentally limiting their scalability?

* Reply to post from Faisal Elias**Reply**
* Mark as Unread**Mark as Unread**

**AW**

[**Alex Wenger**](https://psu.instructure.com/courses/2415050/users/7269486)

Sep 28 9:29am

Reply from Alex Wenger

In “Making Post/Anthropocentric Futures in Agrobiodiversity Conservation,” Franziska von Verschuer draws on her PhD dissertation research, summarized for “Nature and Culture,” to describe how systems of seed-banking to conserve crop genetic resources  may reproduce some of the same ecological crises these systems are responding to. To trace the evolution of gene banking, she describes the “ex situ” approach to crop genetic conservation. “Ex situ” means out of place in Latin, a strategy where crop genetic resources are conserved outside of their “natural habitats” as a library. This contrasts with “in situ” approaches where farmers produce fresh seeds from year to year, preserving regional variation in crop types in the places where they evolved. Seed banks serve as a time capsule to back up a snapshot of crop genetics, safeguarding against climate and social shocks that might rob farmers of their local informal seed sources in crisis situations. They also preserve traditional varieties in an earlier form, creating a reserve of genetics that has not been displaced by modern crop varieties and global markets.

                The significant contribution that the author makes in this publication is that she identifies how narratives about the role that major seed banks like the Svalbard Seed Bank can reproduce the same management logics that have created the agrobiodiversity extinction crisis in the first place. The author states that their objective is to develop a “rationality of conservation,” and to situate this understanding in relation to natural systems, suggesting a performative nature of conservation and presentation of the work done at Svalbard to connect with larger popular dialogues about safeguarding agrobiodiversity, the “Noah’s Ark” of seed work. She constructs her argument with:

* A historical analysis of the emergence of seed-banking policy.
* Incidents where social and ecological dynamics show the resilience and fragility of this approach.
* A redefinition of how seed banking may not address the underlying crisis that it emerged to address.

To summarize the main argument of the piece, I understood the author to suggest that gene banking as an institutional process can predispose institutions to savoir narratives that reproduce systems of consolidation and control of plant genetic resources. Svalbard emerged from an urgent need to capture rapidly diminishing crop genetic resources and serve as a backup for many nations' national seed collections, but it won’t address the crisis if it sits idle as a library. To illustrate the resilience of this approach, Svalbard rematriated seeds to Syria after the civil war destroyed their domestic collections. Being centralized it also faced a moment of crisis when a water leak threatened seeds in storage. When agriculture is viewed as a vertically integrated process: one crop, one gene, one product, collections like Svalbard have trouble confronting ecological crises which are often multidimensional, and connected across time, the author argues. Conserving an agricultural system that is rooted in technological determinism has become a governing approach to Svalbard and global agrobiodiversity conservation as a whole, the author argues, and needs to be broadened to include a more relational, ecological and non-anthropogenic approach to human relations to nature through agriculture. Growth of agricultural systems that accelerate ecological crisis will create a heightened dependence on approaches like Svalbard, without addressing their underlying socio-environmental fragility, I understood her to say. This reminds me of Polanyi’s double movement. In this sense she argued that the notion of “conservation” itself can be problematic.

Here is where I’ll offer some constructive feedback on how she delivered her argument. While the choice of words was elegant and complex, I wondered if drawing on established concepts of symbiosis and coevolution wouldn’t have been more a more direct way to describe some of the natural systems issues that the author teased apart. I read Zimmerer and Vanek’s “Integrated Framework” article (2016), where they achieved a similar goal with “plant-soil ecological systems.”

On the social sciences front, I don’t feel like she made it expressly clear in the beginning of the article that she was outlining the policy framework that has organized formal seed systems and ex situ conservation policy. The historical review begins in 1967 at the FAO meeting that established how seed banks would combat the loss of agrobiodiversity, but the crisis was long recognized by earlier geneticists, plant breeders and evolutionary biologists since at least the early 1900s. Nikolai Vavilov and Jack Harlan are two leading scientists who were vocal prior to the U.N. meeting that genetic bottlenecks and loss of agrobiodiversity emerged as symptoms of food crop domestication itself and specialized agriculture. Some anthropologists like Marvin Harris and the Human Ecologists viewed the act of annual agriculture and domestication of grains as a perpetuation of much older human ecological crises related to civilization. I really enjoyed Natalia’s phrasing of global trends like these in another class this week, “Different Continent, same process.” Von Verschuer acknowledges this historical trajectory when she notes that 200 out of 6,000 edible plant species are substantially contributing to global crop production, suggesting that specialized agriculture was drawing on a diminished resource base long before the 1900s. It doesn’t diminish from her seed bank argument, but would have made it stronger had she elaborated that the double movement of gene banking is embedded in policy, with the potential to be rewritten.

I saw these conversations play out in real time when I visited the New York Botanical Gardens (NYBG) this week for the first meeting and unveiling of the Global Consortium for Conservation of Food Crops (GCCFG) during U.N. Climate Week. The new research collaborative will unite a series of North and South American botanical gardens that house over 10,000 species of edible and medicinal plants in their collections, collectively. Historically these have been siloed by the same approaches von Verschuer writes about. Dr. Alex McAlvey, who is one of the researchers spearheading this collaborative, pointed out that government repositories house approximately 2,000 speciesf food plants to the botanical gardens’ 10,000. They envision a future where the public and researchers can play an active role in accessing and rematriating these seeds for reintroduction into agricultural production, particularly with a focus on nutritional security and cultural sovereignty. I did wonder if public advisory panels might be important for this collaboration to check against biopiracy risks by corporate sponsors or adajacent seed companies. Organizations like CGIAR and Crop Trust, who are active in organizing Svalbard, are also involved as collaborators, providing oversight into these issues, making von Verschuer’s work that much more timely.

A few really cool projects that I wanted to share with everyone included:

Dr. Anna Herforth’s [**Minimum Dietary Diversity (MDD)Links to an external site.**](https://www.fao.org/newsroom/detail/new-sdg-indicator-on-minimum-dietary-diversity-adopted-by-un-statistical-commission/en) measure which she developed using her background as a nutritionist, combining qualitative and quantitative methods to create place-based measures of nutrient security via local food group assemblages - [https://www.rockefellerfoundation.org/bellagio-breakthroughs/what-gets-measured-gets-managed/Links to an external site.](https://www.rockefellerfoundation.org/bellagio-breakthroughs/what-gets-measured-gets-managed/)

The original data is searchable via the Diet Quality Project, and translated into most major languages - dietquality.org

Biodiversity Heritage Library is a searchable database of botanical records from national botanical gardens housed by NYBG, including records of food crops and wild plants - https://www.biodiversitylibrary.org/

**Discussion question:**What ways can we communicate as researchers between conservation organizations, stakeholders and the academic literature on the patchy nature of agrobiodiversity research to support development and implementation-based research? How do we translate these issues for smallholders in our respective areas of work, given that the variables that necessitate conservation are constantly changing and complex, to create equitable opportunities for all to access agrobiodiversity sustainably?

**Sources:**

Von Verschuer, F. (2021). Making Post/Anthropocentric Futures in Agrobiodiversity Conservation. *Nature and Culture*, *16*(1), 47–64. [https://doi.org/10.3167/nc.2020.160104Links to an external site.](https://doi.org/10.3167/nc.2020.160104)

Zimmerer, K., & Vanek, S. (2016). Toward the Integrated Framework Analysis of Linkages among Agrobiodiversity, Livelihood Diversification, Ecological Systems, and Sustainability amid Global Change. *Land*, *5*(2), 10. [https://doi.org/10.3390/land5020010Links to an external site.](https://doi.org/10.3390/land5020010)

* Reply to post from Alex Wenger**Reply**
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**AC**

[**Andres Guillermo Mayorga Corleto**](https://psu.instructure.com/courses/2415050/users/7250729)

Sep 28 2:31pm

Reply from Andres Guillermo Mayorga Corleto

The agrarian question has been an academic debate ever since Marx explained the agrarian transformation from feudalism to the agrarian origins of capitalism. From the very beginning, scholars clearly defined and studied the boundaries and limits of the rural and agrarian role in supplying raw materials and alienated proletarians to industry, and the debate has continued to evolve. In this sense, the agrarian question has expanded its definition and implications, showing how the exodus of natural resources and peasants gave life to the industrial revolutions that, in turn, structured the urban as a historical social construct.

The urban question, also rooted in Marxist analysis, has centered more on the implications of workers’ ultra-alienation and the dynamics of production and reproduction, including the gendered dimensions of social reproduction in urban industrial growth. It examines how urban spaces construct, produce, and reproduce life, injustices, and social struggles in an environment both created and developed through capitalist progress. Yet, as Ghosh and Meer (2021) argue, critical urban studies have often marginalized or underrepresented the rural within key elements of the urban question. Rural spaces are frequently treated as peripheral providers of ecosystem services rather than as central axes of urban struggles and injustices. For this reason, the authors prioritize one branch of urban theory—extended urbanization—as a logical and historically interconnected bridge with the agrarian question.

Without dwelling too long on the theoretical aspects of the article, I want to apply the authors’ analysis to a couple of practical examples. A few weeks ago, when Karl finished his presentation in the Department of Geosciences, he spoke about peri-urban spaces that have emerged in recent decades as key arenas of territorial struggle and food justice. It took me less than two minutes to realize that many of the farming communities I have visited in El Salvador, Guatemala, and Honduras fit this description. These are spaces that exist at the margins of cities, where ethno-racial, environmental, and food struggles remain alive in the liminal terrain between rural and urban life. This makes a great deal of sense, because in our contemporary era, territorial justice is now also an urban issue. We see inequalities in access to resources, public services, and infrastructure manifesting in marginalized peri-urban zones that embody a dual ambiguity of injustice: (1) displaced peasant populations pushed into marginal peri-urban spaces, and (2) proletarian industrial workers who live on the fringes of the minimal benefits afforded by capitalism and industrialization.

This analysis leaves me with two questions I would like to explore further in class:

1. In this ambiguity between rural dispossession and the racialized marginalization of urbanization that structures peri-urban spaces, are we witnessing a restructuring or merging of struggles into an emergent social class of “urban peasants”?
2. What role might these new urban peasants play in supporting, transforming, or contributing to struggles for food sovereignty in the context of “agricultural modernization” and the deepening inequalities of cities?

Finally, we should consider how much attention urban agriculture has drawn since the beginning of this century. Today, major global urban capitalist centers have themselves become engaged in urban agroecology movements, which emerge as responses to the injustices embedded in both the urban question and the agrarian question.

* Reply to post from Andres Guillermo Mayorga Corleto**Reply**
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**AK**

[**Ali Khosravi Kazazi**](https://psu.instructure.com/courses/2415050/users/7293105)

Sep 28 6pm

Reply from Ali Khosravi Kazazi

Mathinya’s academic background in soil and agricultural sciences, combined with her position at a South African university and training at an international center, gives her both local insight and global methodological breadth. These are valuable for rigorous fieldwork, comparative analysis, and turning findings into policy-relevant recommendations.

Mathinya and her colleagues address a critically important disconnect between national policy and local reality in rural South Africa. The government's continued substantial investment in small-scale agriculture as the primary solution for rural poverty is based on a fundamental assumption: that people in the former homelands are, or wish to be, small-scale farmers. If this assumption is wrong, these policies are doomed to fail, wasting public funds and perpetuating the very cycles of deprivation they aim to break. This study moves beyond documenting what people do out of necessity to explore what they truly want for their futures.

The existing literature presents a contested landscape. On one hand, South African policy firmly positions agriculture as the engine for inclusive rural transformation. On the other hand, scholarly work is divided with some highlighting farming's role in food security and others pointing to its low productivity and fragile market links. A body of work from across Africa further suggests that rural programs often fail because they overlook local aspirations, which may not prioritize farming at all. Therefore, Mathinya and her colleagues, in this stuy, try to understand how rural households currently regard farming, how people truly aspire to earn a living in the future and how they imagine their ideal agricultural operations.

They employed a sophisticated, qualitative plan centered on two contrasting case studies: the remote, traditional homeland of Emmaus and the more peri-urban, planned Trust village of Thaba Nchu. Their methodology was multi-faceted using life history interviews with household heads to contextualize their journeys, semi-structured interviews with both heads and dependents to directly capture their aspirations, and farm mapping exercises to visually articulate the gap between current reality and future dreams for those inclined to farm.

The data collected was rich and narrative, consisting primarily of transcribed interviews full of personal histories, perceptions, and dreams, supplemented by hand-drawn farm maps. The analysis was inductive and thematic, with researchers manually coding the transcripts to identify emergent patterns, eventually categorizing aspirations into four dominant themes: survival-oriented farming, farming as a business, other livelihood pursuits, and the success of one's dependents.

The patterns that emerged show a clear generational divide is evident; while household heads, particularly women, often view farming as essential for survival, their adult children largely see it as a fall-back and aspire to jobs or businesses outside of agriculture. Furthermore, regional context matters immensely, with aspirations in the remote area being more constrained and subsistence-focused, while those in the better-connected area were more diverse and commercially oriented. A key insight is that only a small minority, just 23% of interviewees, aspired to farm as a business, and their visions were of a highly commercial, capital-intensive operation starkly different from their current reality. Adding a layer of critique, participants frequently cited frustration with poorly executed and uncoordinated government interventions as a major constraint.

Interpreting these results, the study compellingly argues that South Africa's pro-agrarian policy is fundamentally misaligned with the aspirations of a significant portion of its rural population, especially the youth. The findings suggest that the "opportunity space" is fragmented and constrained, but policy focuses on enlarging only one narrow pathway. The study concludes that the goal should not be to steer people into a future they do not want, but to authentically expand the entire range of opportunities by improving education, building infrastructure, and supporting diverse rural economies. Ultimately, it is a powerful call to move beyond a one-size-fits-all agrarian model and towards a pluralistic approach that respects the dynamic and diverse dreams of rural South Africans.

Discussion questions:

1 - Given the study's core findings that rural aspirations are diverse and that policy must therefore expand choices and consider these aspirations, who should be the primary actors responsible for translating this imperative into actionable policy? Furthermore, what is the specific share of responsibility for each key stakeholder?

2- The study notes that many participants struggled to articulate their future goals. How can policymakers and researchers differentiate between deeply held, internally motivated aspirations and the "prompted ideals" that might emerge in an interview setting?

* Reply to post from Ali Khosravi Kazazi**Reply**
* Mark as Unread**Mark as Unread**

**AA**

[**Abdul-Salam Jahanfo Abdulai**](https://psu.instructure.com/courses/2415050/users/7277622)

Sep 28 6:52pm

Reply from Abdul-Salam Jahanfo Abdulai

This is another interesting paper on agrobiodiversity and gender where the authors sought to challenge conventional narratives on agricultural labor division. They documented how women’s agricultural knowledge and practices contribute significantly to crop diversification and agrobiodiversity conservation, despite being systematically undervalued.

Importantly, the author’s found that women-managed farmlands exhibited higher crop diversity than those management by men. Thus, in this study they found that women cultivated all the crop types they identified compared to only 78 percent cultivated by male-headed households. Significantly, the difference to them was indicative of the gendered motivations and responsibilities: women prioritizing nutritional diversity and food security of their family while men focus on cash crops. I also find it interesting that they found that women’s agricultural participation extends across the entire production cycle – d from seed selection and storage through cultivation to marketing. Although their contributions remain less visible in cereal production dominated by mechanization. For me, reading this paper in connection with Frimpong’s finding on the important role of women’s agency in shaping nutritional diversity is very illuminating.

Another interesting finding of the study is the author’s highlight on homestead gardens as repositories of agricultural diversity managed primarily by women. These spaces, which can easily be overlooked in agricultural assessments entailed field crops, contain complex agroforestry systems with vegetables, spices, medicinal plants, and fodder species. These elements are important and contribute to household wellbeing (such as food security) but also conservation. Another thing I found insightful was the connection between off-farm wage labor opportunities and crop diversity. The authors noted that off-farm work for men negatively correlate with crop diversity on male-managed farms suggests. What I took from this is that agricultural intensification and market integration may inadvertently reduce agrobiodiversity especially when women’s knowledge and practices are excluded from decision-making.

As someone who is interested in mixed methods including quantitative survey and qualitative FGDs and Interviews, I appreciated the authors’ use of it to capture both quantitative differences in labor participation and qualitative insights into gendered agricultural knowledges systems. However, I noted the author’s references to p-value in support of their findings. I did not see the author doing any p-value dependent analysis, but they referred to it a couple of times.

Nonetheless, the implication of this research is still important. It extends beyond local agricultural practices to global conversations about sustainable intensification and biodiversity conservation. As agricultural development programs increasingly promote commercialization and mechanization, this research suggests that excluding women from agricultural decision-making may undermine both food security and agrobiodiversity conservation goals. The documented link between women's empowerment in agriculture and improved household dietary diversity reinforces arguments for gender-inclusive agricultural policies.

**Discussion Questions**  
1. This paper triggered a thought about mechanization that characterizes large scale agriculture (tractors, combine harvesters, chemical inputs). This mechanization tend to exclude women (in addition to reducing crop diversity), is this pattern inevitable?

* How can modernization approaches maintain both gender inclusion and agrobiodiversity?

1. Given that women maintained agrobiodiversity primarily in their gardens, what does this suggest about the resilience of gendered agricultural systems under growing agricultural intensification efforts.