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Dam the consequences

Irrigation and jobs in the Kimberley

Promotion of large-scale irrigation in the West Kimberley ignores the lessons of the East Kimberley. Census data shows that despite huge public subsidy in Ord irrigation, the major employers in both regions are health, education and services. Tourism, carbon farming, renewable energy and high-value niche agriculture are also avenues of potential development.

Discussion paper

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Summary

Plans to promote irrigated agriculture in the West Kimberley should be assessed in light of experience in the neighbouring East Kimberley which has the Ord River scheme. Despite decades of effort in the Ord, \$2 billion dollars invested including huge public subsidy, thousands of hectares cleared and huge amounts of water used, census employment data shows the employment structure of the two areas is very similar. In both, the largest employing industries are health, education and public administration.

Agriculture accounts for nine percent of employment in the East Kimberley and six percent in the West. In absolute terms, 290 people work in agriculture in the East Kimberley and 148 people employed in agriculture in Derby-West Kimberley, a difference of 152. Much of this difference is historic. The most recent round of investment in the Ord saw an increase of just 60 jobs despite investment of \$364 million, or \$6 million per job. In the decade to 2016 the unirrigated West Kimberley saw agricultural employment increase by 22 jobs in the absence of large-scale irrigation, much of this in high-value sub-industries.

Other opportunities exist for the West Kimberley. Aside from further investment in major employers such as health and education, land management programs such as the Indigenous rangers program have considerable promise. While comparison is difficult, such programs can see a job being created for every \$47,000 of public investment, as opposed to the \$6 million in government investment alone for each job estimated in the Ord Scheme.

Tourism employment in the West Kimberley appears to trail the East Kimberley despite similar offerings and proximity to an international airport in Broome. Establishment of the Fitzroy River National Park and the in-development Great Kimberley Marine Park could bring more opportunities. Carbon farming, renewable energy and high-value niche agriculture are also avenues of potential development.

The comparison of East and West Kimberley demonstrates the need to look beyond capital-intensive industries such as irrigated cropping and mining to develop northern Australia. Investments in making northern Australian communities healthier, better educated, better connected places to live in, stay in and move to are likely to be more effective than risky investments in projects that generally benefit private investors and a handful of employees.

Introduction

If pressed to pinpoint the factors that have most hampered European man's attempts to make a commercial success of agriculture in the North West, I would unhesitatingly nominate distance, ignorance of the physical environment and a reprehensible aversion to learning by experience (of others before you).¹

Dr FH Bauer – North Australia Research Unit, Australian National University, 1983

The north has untapped promise, abundant resources and talented people ... A strong north means a strong nation.²

Office for Northern Australia (2015), *White Paper for Developing Northern Australia*

Developing northern Australia has been a focus for Australian governments for over a century. Government policy and money is directed at capital-intensive industries such as large-scale irrigation or mining, ventures which often fail financially and always fail to drive population growth and community development at the scales envisaged by their promoters.

On some levels, little seems to have been learned. The focus of the federal government's Northern Australia Infrastructure Facility and the Northern Australia White Paper is firmly on the same-old approach. The WA Government's Water for Food program is dedicated to irrigation. However, some changes may be on the policy horizon. The Fitzroy River Declaration by traditional owners outlines a different vision for future development and this declaration was adopted by the Labor party during their successful election campaign.³

As proposals to develop irrigated agriculture in the west Kimberley are being considered, lessons from the east Kimberley need to be revised.

The Wyndham-East Kimberley and Derby-West Kimberley Local Government Areas (LGAs) are similar in many respects. They are similar distances from Australia's (and Asia's) main cities, with similar climates and landscapes. They both have similar areas

¹ In Muchow RC (1985) *Agro research for the semi-arid tropics*; proceedings of a symposium held in Darwin in March (1983), University of Queensland Press.

² Office for Northern Australia (2015), *Our North, Our Future: White Paper for Developing Northern Australia*, p1, <http://northernaustralia.gov.au/files/files/NAWP-FullReport.pdf>

³ Kimberley Land Council (2016) *Kimberley Traditional Owners unite for the Fitzroy River*, <https://www.klc.org.au/kimberley-traditional-owners-unite-for-the-fitzroy-river/>; WA Labor (2017) Plan for the Kimberley, https://d3n8a8pro7vhmx.cloudfront.net/likenowhereelse/pages/146/attachments/original/1488953599/Labor_election_commitments.pdf?1488953599

and total population. Derby-West Kimberley is approximately 118,000 square kilometres and 7,728 people, while Wyndham-East Kimberley is 121,000 square kilometres with 7,152 people. The labour force is larger in Wyndham-East Kimberley, with 3,234 people employed compared to 2,319 in Derby-West Kimberley.⁴

A key difference between the two Kimberley LGAs is the Ord River Scheme in Wyndham-East Kimberley. Since 1959, at least \$2 billion has been spent on developing large-scale irrigation in the Ord Scheme, of which over \$1.5 billion has been public money.⁵ Despite this investment, employment in the two LGAs is very similar.

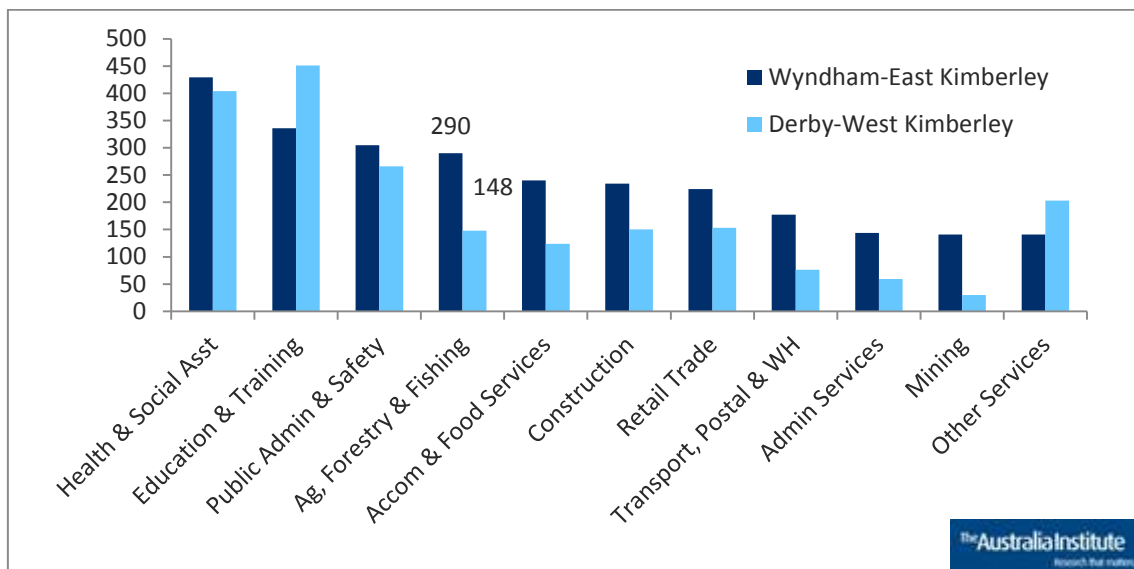
⁴ Shire of Wyndham East Kimberley (n.d.) *Welcome to Shire of Wyndham-East Kimberley*, <http://www.swek.wa.gov.au/>, Shire of Derby West Kimberley (2013) *Local Planning Strategy*, https://www.planning.wa.gov.au/dop_pub_pdf/lps_DERBY_KIMB.pdf, ABS (2016) Census of population and housing, accessed through TableBuilder Basic, <https://auth.censusdata.abs.gov.au>

⁵ Grudnoff and Campbell (2017) *Dam the expense: The Ord River irrigation scheme and the development of northern Australia*, http://www.tai.org.au/sites/default/files/P309%20Dam%20the%20expense%20-%20Ord%20River%20report%20FINAL.3_0.pdf. Figures in 2016 dollars.

East meets West

The employment profiles of Wyndham-East Kimberley and Derby-West Kimberley are very similar. The major employers in each are health, education and public administration, as shown in Figure 1 below:

Figure 1: Employment in East and West Kimberley LGAs



Source: 2016 Census

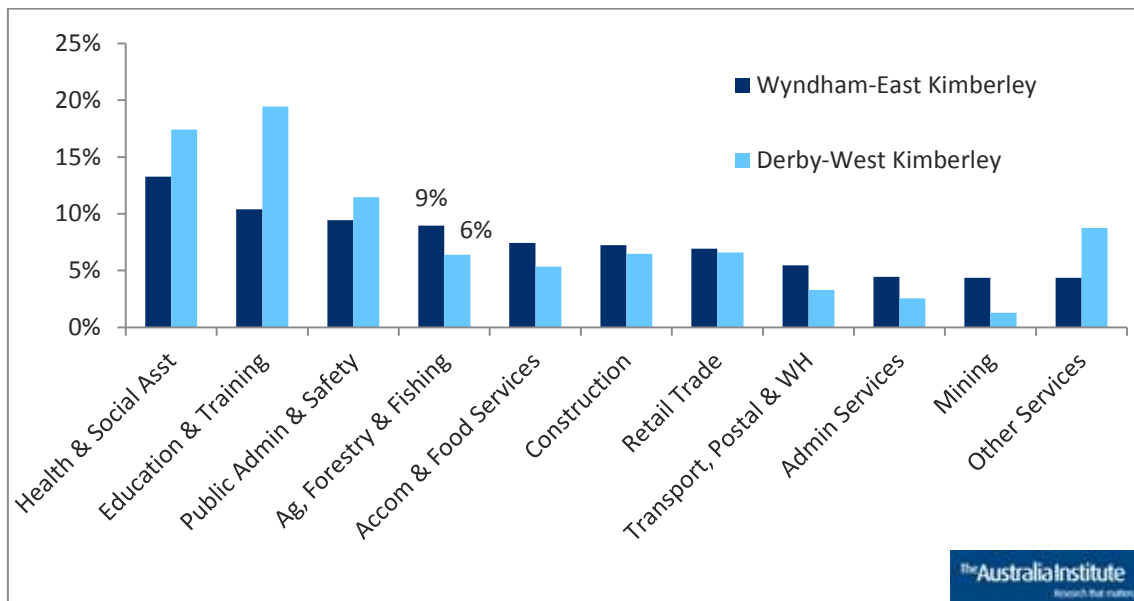
Figure 1 shows that despite decades of effort, \$2 billion in Ord Scheme investment, along with over 14,000 hectares of irrigated farmland, and substantial amounts of water used every year, agriculture is still only the fourth largest employer in Wyndham-East Kimberley. 290 people work in agriculture in Wyndham-East Kimberley.

By contrast, there is very little irrigated agriculture in the Fitzroy River catchment, with 148 people employed in agriculture in Derby-West Kimberley, a difference of 152.

Figure 1 also shows considerable difference between the LGAs in Accommodation and Food Services and Retail Trade, two key industries related to tourism, discussed further below.

Considered as a percentage of the workforce in each area, the difference in agricultural employment seems smaller still, as shown in Figure 2 below:

Figure 2: Shares of employment in industry by LGA, 2016



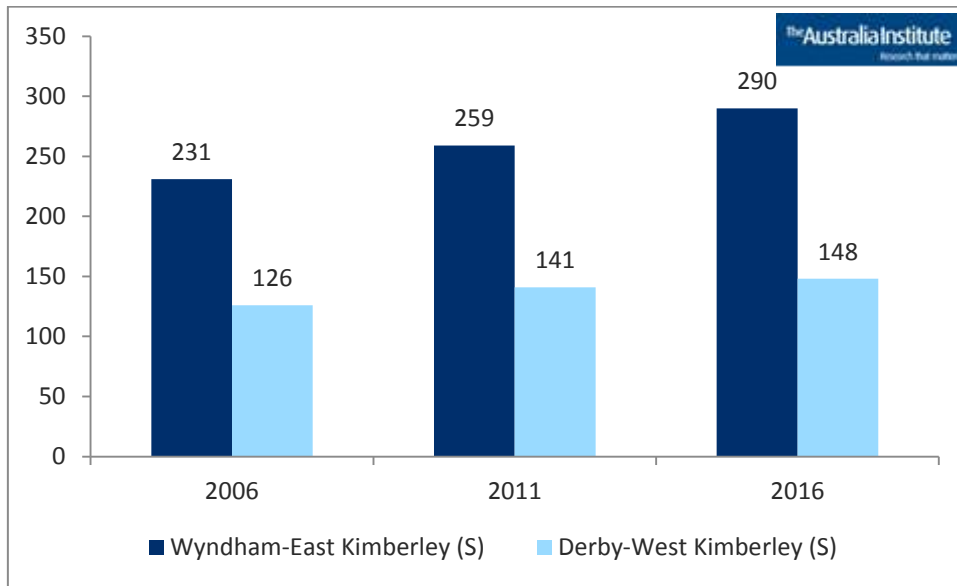
Source: 2016 Census

Figure 2 shows that while nine percent of employment in Wyndham-East Kimberley is in agriculture, this figure is six percent in Derby-West Kimberley, a difference of just three percent as Derby-West Kimberley has a smaller workforce. While large-scale irrigation may dramatically change the landscape of an area, this difference of 3 percentage points demonstrates that irrigation has not dramatically transformed the economy of the Kimberley.

Census data over the past decade also shows the minimal impact that later injections of funding into the Ord scheme have had on the agricultural profile of the region. The most recent round of investment in the scheme saw \$364 million invested in the years 2010 to 2014.⁶ The change in overall agricultural employment in the two LGAs is shown in Figure 3 below:

⁶ *ibid*

Figure 3: Agriculture, Forestry and Fishing employment



Source: 2006, 2011 and 2016 Censuses

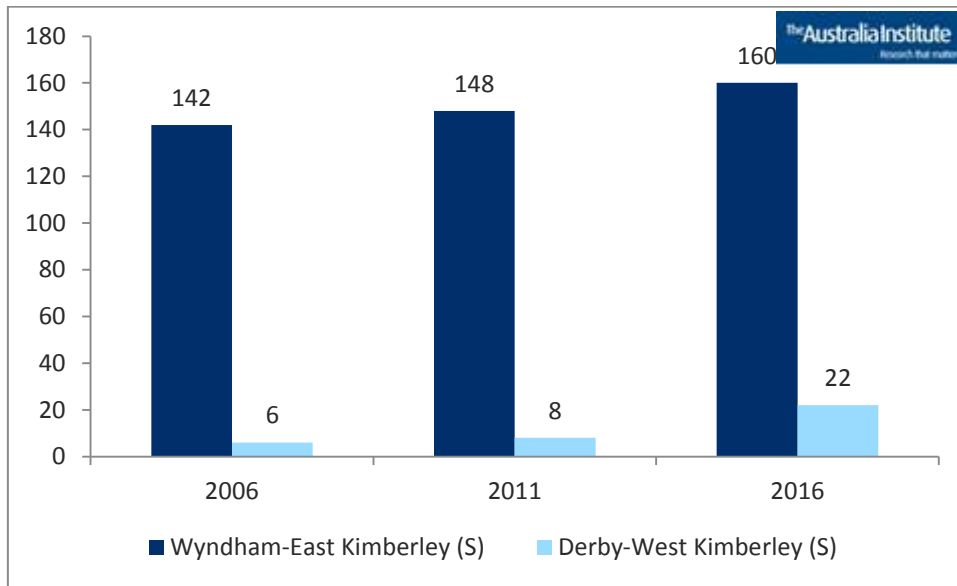
During the decade shown in Figure 3, total Agriculture, Forestry and Fishing employment increased in Wyndham-East Kimberley by 59 jobs, or 26%. This represents around \$6 million in capital investment per job. The Western Australian Auditor General similarly found that despite this public investment full time employment in the Ord area increased by only 61 people plus 10 to 15 seasonal workers.⁷

However, Agriculture, Forestry and Fishing employment in neighbouring Derby-West Kimberly also increased by 22 jobs or 17% over the same period without similar investment in large-scale irrigation.

Some parts of agriculture are not associated with irrigation. Figure 4 below looks at employment in sub-industries that are sometimes with irrigated agriculture, specifically horticulture, cropping and forestry. It shows an increase of just 18 jobs in Wyndham-East Kimberley, compared to 16 in Derby-West Kimberley (off a much smaller base).

⁷ WA Auditor General (2016) *Ord-East Kimberley Development*, <https://audit.wa.gov.au/reports-and-publications/reports/ord-east-kimberley-development/auditor-generals-overview/>

Figure 4: Horticulture, cropping and forestry employment



Source: 2006, 2011 and 2016 Censuses

Notes: Includes the sub-industries of Agriculture and Fishing Support Services, Forestry and Logging, Forestry Support Services, Fruit and Tree Nut Growing, Mushroom and Vegetable Growing, Nursery and Floriculture Production and Other Crop Growing.

This is a story of two neighbouring LGAs – of which one has a multi-billion dollar dam project. The Ord River scheme may have made changes to the physical landscape, but it has not made major changes to the employment profile of Wyndham-East Kimberley. On the contrary, its employment profile remains similar to that of its near neighbour, where agricultural employment is not based on irrigation.

Other opportunities in the West Kimberley

There are other opportunities to develop Northern Australia that do not have the same risks and poor track record as irrigated agriculture projects. Perhaps most obviously, the biggest employers in the Fitzroy region are education and healthcare. Further investment in these established sectors will be likely to create more jobs and have greater social and economic benefit than investing in risky, capital intensive large-scale irrigated agriculture projects.

Other options including Indigenous ranger programs and tourism should be considered when deciding how to spend taxpayers money developing Northern Australia.

Indigenous rangers

The Working on Country Program receives Federal Government funding to support Indigenous ranger programs across Australia. In 2012-13 the program received \$67 million in funding. In just 6 months from January to June 2012, 1,423 people were employed through the program, although many of these are on a part-time or casual basis.⁸ While comparison is difficult due to the nature of the work, this equates to some form of employment being created for every \$47,000 of public investment, as opposed to the \$6 million in government investment alone for each job estimate from the Ord Scheme.

In the Fitzroy catchment the Nyikina Mangala people have developed their own Walalakoo Healthy Country Plan to plan for the future of their country. Part of this plan is to develop the Indigenous rangers program in the area, with the aim of having 10 Nyikina Mangala rangers by 2018.⁹ With over 50 Aboriginal communities in the catchment, there is strong potential for employment through Indigenous Ranger Programs with relatively low public investment required.

⁸ Pew Charitable Trusts (2015) *Working for Our Country: A review of the economic and social benefits of Indigenous land and sea management*, <http://www.pewtrusts.org/~media/post-launch-images/2015/11/economicandsocialbenefitsindigenouslandwhitepaper.pdf>

⁹ Walalakoo Aboriginal Corporation RNTBC (2016): *Walalakoo Healthy Country Plan 2017–2027*, <https://www.walalakoo.org.au/new-blog/2017/5/22/2sdsg6ur92rzkfsr9et86l0wyy4xxk>

Tourism

Hundreds of thousands of people visit the Kimberley region every year. In 2014 Tourism Western Australia estimated that 402,400 people visited the Kimberley.¹⁰ The Department of Regional Development ranked tourism ahead of agriculture in value to the region in its 2014 regional profile.¹¹

The tourism industry could be boosted with the introduction of the promised Fitzroy River National Park and the in-development Great Kimberley Marine Park.¹²

A report by Jack Carlsen of Tourism Research Services, commissioned by Environs Kimberley and the Wilderness Society WA estimated that the establishment of a Great Kimberley Marine Park could increase the tourism, cultural and conservation economy of the Kimberley by almost 50% to \$134 million per annum, supporting 367 jobs – which represents an increase of almost two-thirds in employment.¹³

Cultural tourism is another growth area. Tourism WA recognises the Kimberley as having the “highest density of quality Aboriginal tourism experiences in the State”, with the potential to be Australia’s premier Indigenous tourism destination.¹⁴ This often overlaps with other tourism opportunities along the Fitzroy like camping, fishing tours and the Indigenous art industry.¹⁵

The Walalakaloo Healthy Country Plan outlines tourism as a key business opportunity that they could take advantage of with sufficient resourcing. The Plan ranked mining, climate change, dams and water management among the highest threats to them achieving their targets for their country.¹⁶

¹⁰ Tourism WA (2014), *Kimberley Development Commission Area*, <http://www.tourism.wa.gov.au/Publications%20Library/Research%20and%20reports/Kimberley%202014.pdf>

¹¹ Department of Regional Development (2014), *Kimberley: A region in profile 2014*, http://www.drd.wa.gov.au/Publications/Documents/A_region_in_profile_2014_Kimberley.pdf

¹² See <http://www.drd.wa.gov.au/projects/Parks-and-Wildlife/Pages/Great-Kimberley-Marine-Park.aspx> and <https://www.markmcgowan.com.au/news/wa-labor-announces-plans-to-protect-the-kimberley-wilderness-351>

¹³ Carlsen (2015) *The economic benefits of creating a ‘world class’ Great Kimberley Marine Park*, https://www.wilderness.org.au/sites/default/files/WA/Kimberley/TWS_Report%2832Pages%29_WEB_Single_Pages.pdf

¹⁴ Tourism WA (2016) *Destination development*, <https://www.tourism.wa.gov.au/Publications%20Library/Events/Kununurra%20Forum%202016%20-%203%20Destination%20Development%20WEBSITE.pdf>

¹⁵ See for example Australian Art Network (n.d.) *The Kimberley*, <http://australianartnetwork.com.au/regions/the-kimberley/>; Aboriginal Adventures (n.d.) *Kimberley Experience*, http://www.aboriginaladventures.com.au/kimberley_experience/overview_and_map.phtml; Tourism WA (n.d.) *Camping with custodians*, https://www.tourism.wa.gov.au/About%20Us/Growing_tourism/Aboriginal-tourism/Camping_with_Custodians/Pages/Camping-with-Custodians.aspx#/

¹⁶ Walalakoo Aboriginal Corporation RNTBC (2016): *Walalakoo Healthy Country Plan 2017–2027*

Other economic opportunities

The Kimberley region has been the subject of many proposals for economic development that do not depend on large-scale irrigation.

Carbon farming: Traditional owners the Kimberley Land Council are participating in the federal government’s Carbon Farming Initiative, by using Indigenous fire management practices like savannah burning. These reduce the intensity and frequency of wild fires by setting and managing “Right Way Fires”, which burn cooler with lower emissions. Over two years, participating native title groups generated 230,000 Kyoto Australia carbon credit units, and the land council has plans to expand to other native title groups.¹⁷

Native “super fruit” harvesting and processing: The Kimberley is home to a light-green fruit called gubinge (“Kakadu plum”), which is high in anti-oxidants and vitamin C. The trees can go without water for long periods of time, and there are farming operations involving hundreds of trees with crops worth tens or hundreds of thousands of dollars.¹⁸ As well as being eaten as a health food, it sees use in cosmetics. In February 2018, a processing plant was built, allowing the manufacturing to occur on-site in the Kimberley – instead of the value-adding taking place elsewhere.¹⁹

Renewable energy: The region has been the subject of considerable interest from the renewable energy industry, including a proposal in November 2017 for onshore wind and solar panels.²⁰

¹⁷ Kimberley Land Council (n.d.) *Cultural enterprises*, <https://www.klc.org.au/cultural-enterprises/>

¹⁸ Cordingley (2015) *Global plans for native Kimberley super fruit*, <https://thewest.com.au/news/kimberley/global-plans-for-native-kimberley-super-fruit-ng-ya-129637>

¹⁹ Fowler and Smith (2018) *Gubinge, the Kimberley super fruit finding success in the health food industry*, <http://www.abc.net.au/news/rural/2018-02-05/gubinge-harvest-growing-despite-setbacks-in-kimberley/9312636>

²⁰ Amonini (2018) *EPA probes energy hub plan*, <https://thewest.com.au/news/north-west-telegraph/epa-probes-energy-hub-plan-ng-b88696550z>; Biota Environmental Services (2017) *Asian Renewable Energy Hub*, http://www.epa.wa.gov.au/sites/default/files/Referral_Documentation/Supporting%20Information.pdf

Conclusion

Irrigation proposals in the Kimberley region have a long history of failure. To date no project has proved itself to be economically viable without huge taxpayer subsidy. The Camballin Irrigation Scheme failed altogether in the 1980s due to ongoing flooding, pest problems, and a failure to prove economic viability to investors. The Ord River Irrigation Scheme has had ongoing failures due to the realities of operating in a remote area.

Even with the huge subsidies directed toward the Ord Scheme, the structure of employment in the east Kimberley has not changed substantially from that of the west Kimberley. This demonstrates the need to look beyond capital-intensive industries such as irrigated cropping and mining to develop northern Australia. Investments in making northern Australian communities healthier, better educated, better connected places to live in, stay in and move to are likely to be more effective than risky investments in projects that generally benefit private investors and a handful of employees.