



A Commodity Corridor Approach to Regional Pulse Trade: A Case of Bean Corridors in Eastern and Southern Africa

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Background: The commodity corridor approach

- The “corridor approach” is an economic development strategy in Africa.
- Shift from “**transport corridors**”, to “**development corridors**”
- Corridors embody a range of development objectives aimed at overcoming coordination failures in investment and taking advantage of agglomeration and spill over effects, to boost trade and productivity.
- Gap: Integration of smallholder farmers in national and regional value chains remains suboptimal constraining regional trade and investments in pulses.

Background: Commodity corridors

- **Are defined as areas of economic intensification characterized by flow of products from source to destination, all linked up into a network.**
- Are characterized by production and supply pathways, **clusters (institutions)** infrastructure, geopolitics, cultures and preferences.
- **Contain HUBS.**-areas of identifiable concentration of economic activities, that have an effect on local economies; viz
 - Production hubs
 - Consumption hubs
 - Distribution or Service hubs
- Help integrate producers of a commodity into wider economic activities.
- Provide context for public and private sector investment in pulses, ensuring sustainable flow of products and services across regions

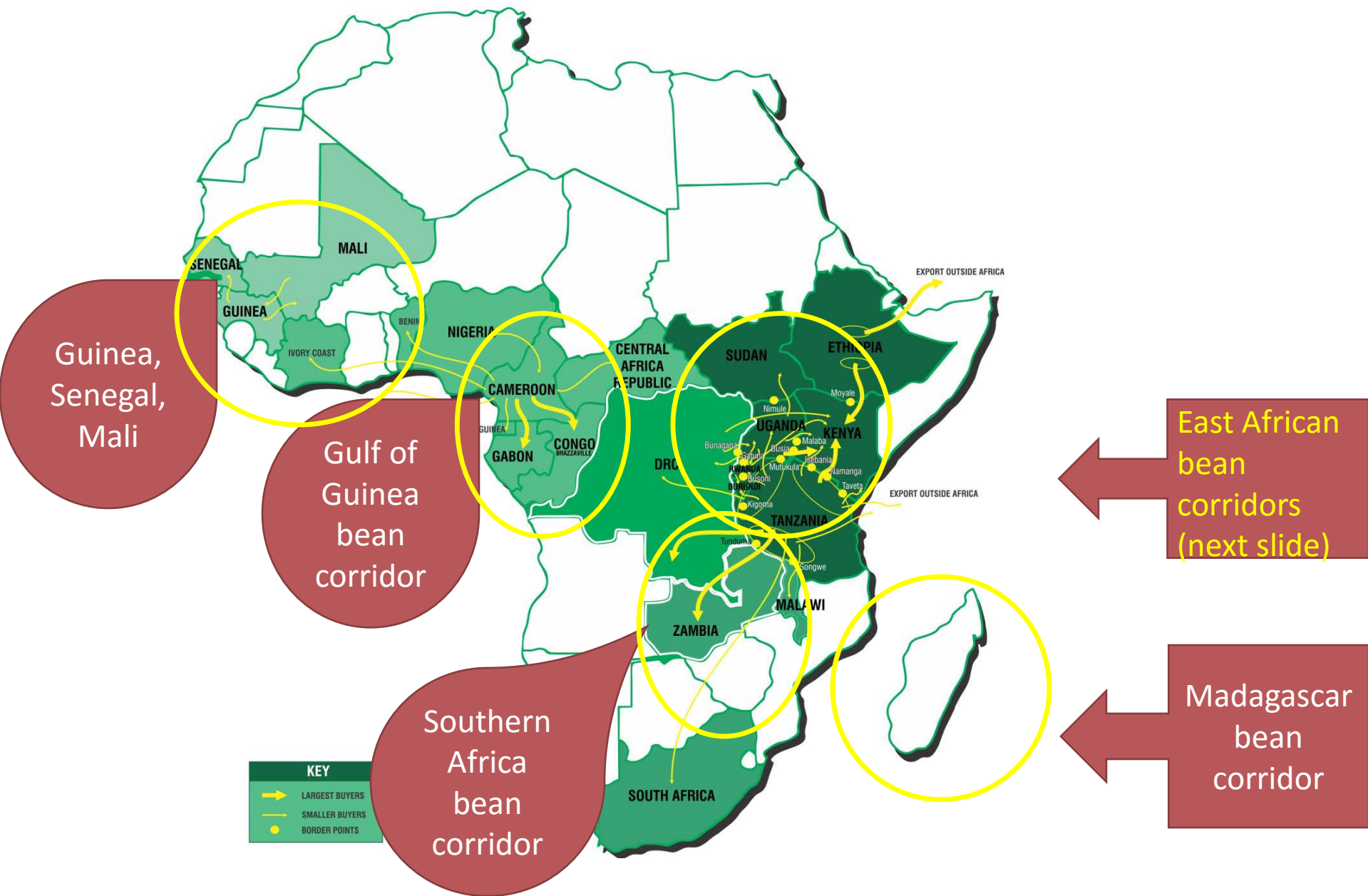
Methods

- The paper presents a case for the corridor approach to pulse research and investment/development
- It presents results from PABRA's work on bean types and varieties and magnitudes of their trade in identifiable bean corridors of sub-Saharan Africa.
- Highlights the significance of informal trade in pulses in the regions
- Data was collected from 876 traders (wholesalers, retailers and transporters) in 7 countries in Eastern and Southern Africa regions. Multi-stage sampling procedures were used
- Data was analyzed through correlations, and a probit model to evaluate factors contributing to the observed trade.

RESULTS: The African Bean corridors

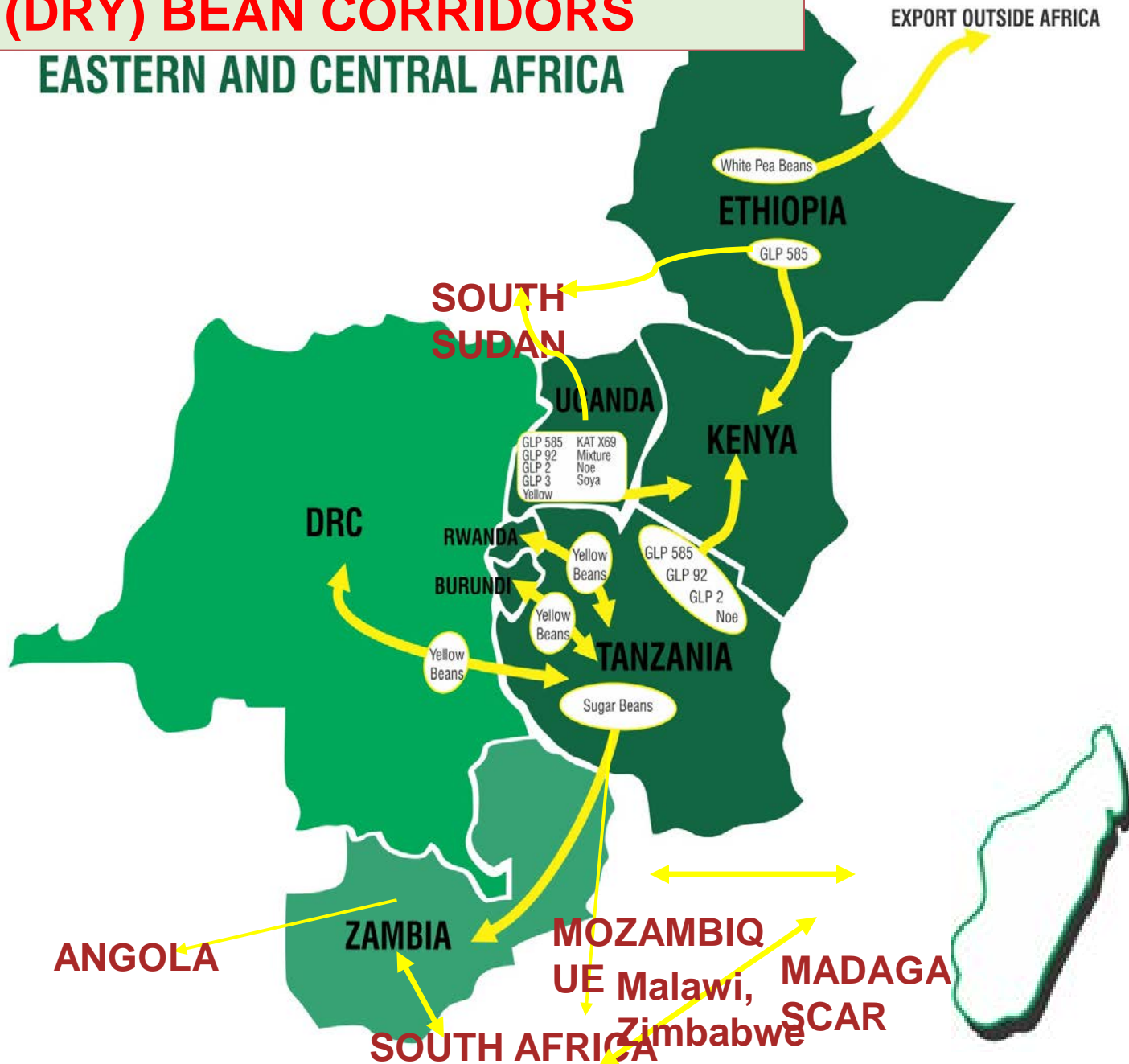
- An assessment of bean flows in Africa reveal that bean trade is characterized by major flows of the commodity between production and consumption areas, connected by distribution networks (i.e. bean corridors). Some of the flows link more than 2 countries to each other.
- The flows are a function of:
 - Production
 - Consumption/captive markets
 - Distribution and support services

(Dry) Bean Corridors in Africa



(DRY) BEAN CORRIDORS

EASTERN AND CENTRAL AFRICA



An example of consumption hub: Kenya

- Population growing at about 2.7%, to grow at 2.4% pa till 2030
- Urbanization at the rate of 4.1% per year to 2030 (UNICEF, 2014).
- Rising incomes with economic growth of 4.7% pa (IEA, 2014).
- Climate change- productivity declining by 2.9% in 2013 from 4.2% in 2012 (Economic Survey, 2014)
- Demand for beans remains higher than production; expected to grow by 27% pa to 2020 (Clansey 2009; Rao et al.2010) driven mostly by population growth, while production will grow by 0.8%.
- Per capita consumption of beans in Kenya remains high (55-66 kg in the western and central Kenya regions (deficit of -354,185 tons)

RESULTS: Tradable bean types and varieties

- Cross border bean trade involves almost equal number of female and male entrepreneurs. However, men dominate the bean transportation (70%) while women dominate retail sector (65%).
- Of the traders involved in cross border trade, 45% were women.
- More than 100 bean varieties are traded in the region, but only 10 types account for 97% of the regional trade.
- Profit margins reach 54%, an indication of inefficiencies in bean marketing system and depend on trader type, country and bean type/variety and quality of beans. E.g. only 10% of traders had information on transport costs.
- In general over 64% of traders have access to information on prices, however, there is limited information on tradable volumes/quantities (only 36%)

Percentage of trade in varieties

Country	Top 2 varieties, %	Top 5 varieties, %	Number of varieties
Kenya	46	66	28
Uganda	26	51	38
Tanzania	25.6	49	40
Burundi	56	70	15
Rwanda	43	71	13
Zambia	52	96	7

Major traded bean types (tons)

Corridor	Destination	Production country	Red Mottled	Pinto	Yellow	Mixture
East Africa	Kenya	Uganda	99,750	27,357	33,871	21,627
	Kenya	Tanzania	208,022	41,310	41,310	2,284
	Kenya	Rwanda	-	-	400	486
	Kenya	Ethiopia	11,205	2,430	-	-
Total			318,977	71,097	75,581	24,397

Results: The nature of the bean trade

- Informal cross border bean trade account for about 92% of the bean traded, this easily escapes official statistics

Country	informal bean trade (%)
Kenya	97
Uganda	66
Tanzania	70
Burundi	90
Rwanda	40
Zambia	100
Malawi	3
Average	92

Determinants of informal cross border trade

Variable	Full model		Restricted model		Marginal effects	
	Coefficient.	Std. Err.	Coefficient	Std. Err.	dy/dx	Std. Err.
Age	0.00	0.01				
Education	-0.08	0.06				
Gender	0.25**	0.13	0.21*	0.11	0.06*	0.03
Experience	0.00	0.01				
Retailer	-0.08	0.13				
Transporter	-0.29	0.20				
Consignment Qt	-0.00**	0.00	-0.00**	0.00	-0.00**	0.00
Documentation	0.40**	0.21	0.40**	0.18	0.11**	0.05
Profit	1.58***	0.18	1.74***	0.16	0.50***	0.03
Kenya-Location	0.35	0.35				
Uganda	-0.07	0.38				
Tanzania	0.80**	0.34	0.67***	0.13	0.19***	0.03
Burundi	0.22	0.38				
Rwanda	0.05	0.48				
Malawi	0.92*	0.52	0.70*	0.40	0.20*	0.11
Constant	-1.04*	0.46	-1.12***	0.10		
Observations	602		602			
Log likelihood X ²	55.45***		-140.47***			
Pseudo R ²	0.07		0.19			

Results: Probability of participating in informal cross border trade

- is higher for men compared to women (increases by 6% when men are involved as opposed to women)
- Decreases with increase in quantities of beans traded (by 1%)
- Where customs documentation and levies are perceived to be higher, the informal trade would increase by 11%.
- Traders located in Tanzania and Malawi were more likely to engage informal trade

Conclusions

- Informal cross bean border trade remains a very important business in East and Central Africa, though much of it is not reflected in the statistics and investments in the sub-sectors.
- Mainstreaming disaggregated pulse data collection will accurately estimate the trade and design policies that support investments in pulse intensification areas (corridors) and enhance cross border trade.
- Use of a commodity corridor approach to improve business environment for pulse farmers and private sector investors is recommended.

Thank you for your attention



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Pan-African Grain Legume
& World Cowpea Conference



THANK YOU

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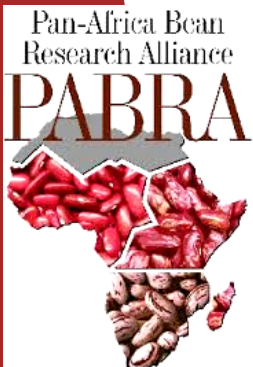
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Methods: Distribution of sampled traders

Country	Total (Number)	Transporter (% of total)	Wholesaler (% of total)	Retailer (% of total)
Kenya	237	10	43	46
Uganda	212	8	77	15
Tanzania	179	15	30	55
Burundi	129	9	44	47
Rwanda	71	23	38	39
Zambia	35	6	18	76
Malawi	13	31	31	38
Total	876	14	40	45

Example of demand projections for Kenya

Year	Projected dry bean demand in Metric Tonnes	Kenyan Population from 2003-2020*	Dry bean Production in Metric Tonnes**	Deficits in Metric Tonnes
2003	310000	34835000	232072	-77928
2004	400450	35786000	375820	-24630
2006	460000	36757000	531800	71800
2007	524000	37752000	383900	-140100
2008	624036	38773000	261137	-362899
2009	540400	38600000	465363	-75037
2010	539000	38500000	390598	-148402
2011	553000	39500000	577674	24674
2012	569800	40700000	613902	44102
2013	585200	41800000	614516	29316
2014	599200	42800000	615130	15930
2015	649436	46388253	615746	-33690
2016	665022	47501571	616361	-48661
2017	680983	48641608	616978	-64005
2018	697326	49809007	617595	-79731
2019	722462	51604423	618212	-104250
2020	732027	52287635	618830	-113196
		Total Deficit between 2012-2014		-354185

** FAOSTAT, 2014

* United Nations, Department of Economic and Social Affairs, Population Division, 2013

Figures from 2003 -2009 From Economic Review of Agriculture in Kenya (MOA, 2010)

Example of the precooked beans: Kenya and Uganda

- Corridors to focus on:
- Uganda: central Uganda bean corridor- base on the red mottled beans; western Uganda bean corridor – base don the yellow beans
- Kenya: west Kenya bean corridor: Machakos (mostly experimental) Narok, Homa bay Migori and Bungoma. Each of these has associated scaling out corridors

Table 2: Market led breeding strategy showing different country's focus

*** Lead country highlighted

Market class	Countries where the bean types are of high or importance
A1. Red Mottled	Uganda, Kenya, DR Congo, Tanzania, Sudan, Madagascar, Burundi, Ethiopia, Rwanda, Malawi, Zimbabwe
All. Reds	
Alla. Large Red Kidneys	Tanzania, Kenya, Rwanda, Madagascar, Ethiopia, Burundi, Ethiopia, Uganda and DR Congo
Allb. Small and Medium Reds	Ethiopia, Kenya, Tanzania, Rwanda, DR Congo, Lesotho, Z
III. Browns	
IIIa. Yellow	Burundi, DR Congo, Rwanda, Tanzania, Kenya, Uganda, Madagascar
IIIb. Brown	Burundi, DR Congo, Rwanda, Tanzania, Kenya and Madagascar
IIIc. Tan/Khaki	Tanzania, DR Congo, Rwanda, Uganda and Burundi
IV. Cream	
IV a. Pinto	Kenya, Uganda, Madagascar
IV b. Sugars	Uganda, DR Congo, Ethiopia, Kenya, Rwanda and Burundi
IV c. Carioaca	Kenya, Tanzania, DR Congo, and Madagascar
V. White seeded	
Va. Navy (Cam, DRC)	Ethiopia, Rwanda, Kenya, Cameroon, DR Congo, and Madagascar
Vb. Large white kidney	Madagascar, DR Congo, Ethiopia, Rwanda, Cameroon and

Major markets of beans in Cameroon

Main Markets (internally)	Main Varieties	Neighboring Countries
North West Region	Meringue (pure red) White	Nigeria Gabon
West Region	Black Mideno (speckled red)	Congo Central Africa
Littoral Region	Senegalaise (black)	Republic Equatorial Guinea
South West Region	Gros graine	Sao tome

Snap beans in West Africa

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Not much produced in Guinea, less than 100 tons per year

The beans are mostly imported from Cote d'Ivoire and from Mali

Senegal exports snap beans to Europe



Production zones	National and international markets for Togolese snap beans					
Atigba	Lomé	Atakpamé	Ghana	Bénin	Nigéria	Burkina
Evita	Lomé	é	Ghana	Bénin	Nigéria	Burkina
Elavagno	Lomé		Ghana	Bénin	Nigéria	
Kakpa	Lomé	Atakpamé	Ghana	Bénin	Nigéria	
Alédjo	Kara	Sokodé				
Koumondè	Kara	Sokodé				