



C:AVA

Cassava: Adding Value for Africa

C:AVA impact model

Background, assumptions, targets
and implications

C:AVA impact model – background

- Developed during strategy refresh, requested by BMGF, initiated by Russell Woo
- Aim: estimate realistic targets (beneficiaries & HQCF volumes) HQCF value chain, using June 2010 as starting point
- Initially, model estimate was 40,000 beneficiaries
- Many iterations to get 67,000 beneficiaries by 2013
- Problem: project beneficiaries but no HQCF production – assumed they would supply alternative chains

C:AVA impact model – background

Beneficiaries include:

- Farmers who received improved planting materials resulting in higher yields
- Farmers who increase sales of cassava due to higher demand for raw materials for HQCF
- Farmer processors who process wet cake or grits for HQCF, or increase production of traditional cassava products due to capacity strengthening and higher yields
- Employees at flash dryer units

Benefits have to be 'attributable' to C:AVA intervention (increased output due to: higher cassava yields, capacity strengthening, improved market linkages & demand)

C:AVA impact model – assumptions

Annual targets determined by:

- Identified market segments
- Rate of uptake of technologies (area for sun-drying or installation of flash dryers)

Estimates are ‘incremental’ benefits = benefits attributable to C:AVA intervention

To calculate farmer beneficiaries: farmers increase cassava sales by 2T/farmer/year through:

- Increased yields due to improved varieties / better management
- Increased farm size (0.15ha)

C:AVA impact model – Uganda

CPGs steadily increase sun-dried HQCF production

Potential target: 3,000 T/yr

Main risk: failing quality control; end users reduce demand

	Apr-10	Apr-11	Apr-12	Apr-13	Apr-14	Apr-15
Total HQCF production (T/year)	4	216	792	1,296	2,016	2,250
Total beneficiaries	15	832	3,049	4,990	7,762	8,663
Total return / beneficiary	\$113.25	\$113.25	\$113.25	\$113.25	\$113.25	\$113.25

C:AVA impact model – Tanzania

18 CPGs steadily increase sun-dried HQCF production

By 2012, FAO groups will also benefit from HQCF value chain developed under C:AVA

Potential target: 700 T/yr

Main risk: no market expansion

	Apr-10	Apr-11	Apr-12	Apr-13	Apr-14	Apr-15
Total HQCF production (T/year)	4	69	202	442	662	662
Total beneficiaries	1,080	1,319	1,805	2,685	3,494	3,494
Total return / beneficiary	\$113.46	\$111.36	\$108.81	\$106.54	\$105.47	\$105.47

C:AVA impact model – Malawi

CPGs steadily increase sun-dried HQCF production (potential market size 2,000T/yr)

Installations of 3 flash dryers (potential market size 4,000T/yr)

Main risk: delay in installation flash dryers

	Oct-10	Oct-11	Oct-12	Oct-13	Oct-14	Oct-15
Total HQCF production (T/year)	15	112	696	2,100	3,050	3,100
Direct beneficiaries - smallholders	38	188	1,342	4,383	6,733	6,878
Direct beneficiaries - labourers	5	41	153	314	333	343
Total beneficiaries	43	229	1,495	4,697	7,066	7,221
Total return / beneficiary	\$123.23	\$131.61	\$111.15	\$109.50	\$111.41	\$112.62

C:AVA impact model – Ghana

Included farmers who received planting materials supplying traditional value chains (~ 6,000)

As drying capacity of intermediaries increases, FPGs shift from gari to wet cake

Installation of 2 flash dryers by 2013, in addition to existing bin dryers

Potential market size: 12,450 T/yr

Main risk: delay in capacity increase of mechanical dryers operators

	Dec-10	Dec-11	Dec-12	Dec-13	Dec-14	Dec-15
Total HQCF production (T/year)	650	2,175	4,075	6,150	7,100	7,100
Direct beneficiaries – smallholders	7,814	9,213	17,722	21,070	15,095	15,222
Direct beneficiaries – labourers	137	262	400	537	585	593
Total beneficiaries	7,951	9,474	18,122	21,608	15,680	15,816
Total return / beneficiary	\$119.53	\$111.46	\$118.40	\$115.95	\$111.36	\$113.78

C:AVA impact model – Nigeria

75 flash dryers will be upgraded over next 5 years

CPGs will increasingly produce wet cake

Potential market size: 30,000 T/yr

Main risk: delay in upgrading flash dryers because of lack of interest
(linked to market demand)

	Dec-10	Dec-11	Dec-12	Dec-13	Dec-14	Dec-15
Total HQCF production (T/year)	0	750	10,000	17,500	25,000	30,000
Direct beneficiaries – smallholders	4,298	5,824	27,564	38,074	52,924	59,179
Direct beneficiaries – labourers	0	76	973	1,458	2,028	2,344
Total beneficiaries	4,298	5,900	28,537	39,532	54,952	61,523
Total return / beneficiary	\$108.37	\$116.89	\$139.05	\$142.03	\$143.79	\$144.40

C:AVA impact model – implications

Farmers are largest proportion of project beneficiaries

But farmer processors and labourers get highest returns

Average return per beneficiary dependent on:

- Price cassava roots + quantity supplied per farmer
- Price wet cake + quantity supplied per farmer processor
- Price gari + quantity supplied per farmer processor
- Wage rate for labour

C:AVA impact model – implications

The model was developed to estimated realistic targets for 2013, but it is *not* a rule book, reality is different!

If exceeding targets, or composition of beneficiaries is different, no problem.

If behind targets, need to explain why and what activities are put in place to catch up.

Key targets are (at country level):

- Total number of beneficiaries
- Volumes of HQCF, cassava roots, and traditional cassava products sold that is attributable to C:AVA intervention
- Average returns for beneficiaries – determined by prices

C:AVA impact model – implications

	Original targets	Revised targets
HQCF production (T/yr)	>40,000 T/yr	25,400 T/yr
Beneficiaries	90,000 households	67,000 smallholders
Return (\$/b/yr)	\$190/yr	\$130/yr

Main challenge is to achieve the return per beneficiary!

C:AVA impact model – implications

Implications for M&E

- Total number of beneficiaries:
 - Monitor # members C:AVA groups
 - Monitor # labourers & wages (Malawi)
 - Monitor raw material procurement intermediaries (from whom did they buy, how much?)
- Volumes of HQCF, cassava roots, and traditional cassava products sold (above baseline)
 - Monitor acres of cassava and production volumes (roots, wet cake, grits, gari) C:AVA group members
 - Monitor production volumes (HQCF) *and* purchase of raw materials by processors (intermediaries, groups)
- Average returns for beneficiaries
 - Monitor prices and production costs (benchmark data)
 - ‘Ground truthing’ during monitor visits and project evaluation?



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Cassava: Adding Value for Africa

C:AVA benchmarking exercise

Production costs and profit margins
along value chain

C:AVA benchmarking

The objectives of the benchmark exercise are:

- to allow comparison of production costs between countries;
- to set targets within companies to improve profitability;
- to inform price negotiation;
- to highlight the main factors affecting profitability;
- to provide information for M&E purposes (e.g. return per beneficiary)

Margins are calculated assuming sun drying or upgraded flash dryers

Updated benchmark data in Feb/Mar 2011 for Malawi, Ghana and Uganda

C:AVA benchmarking

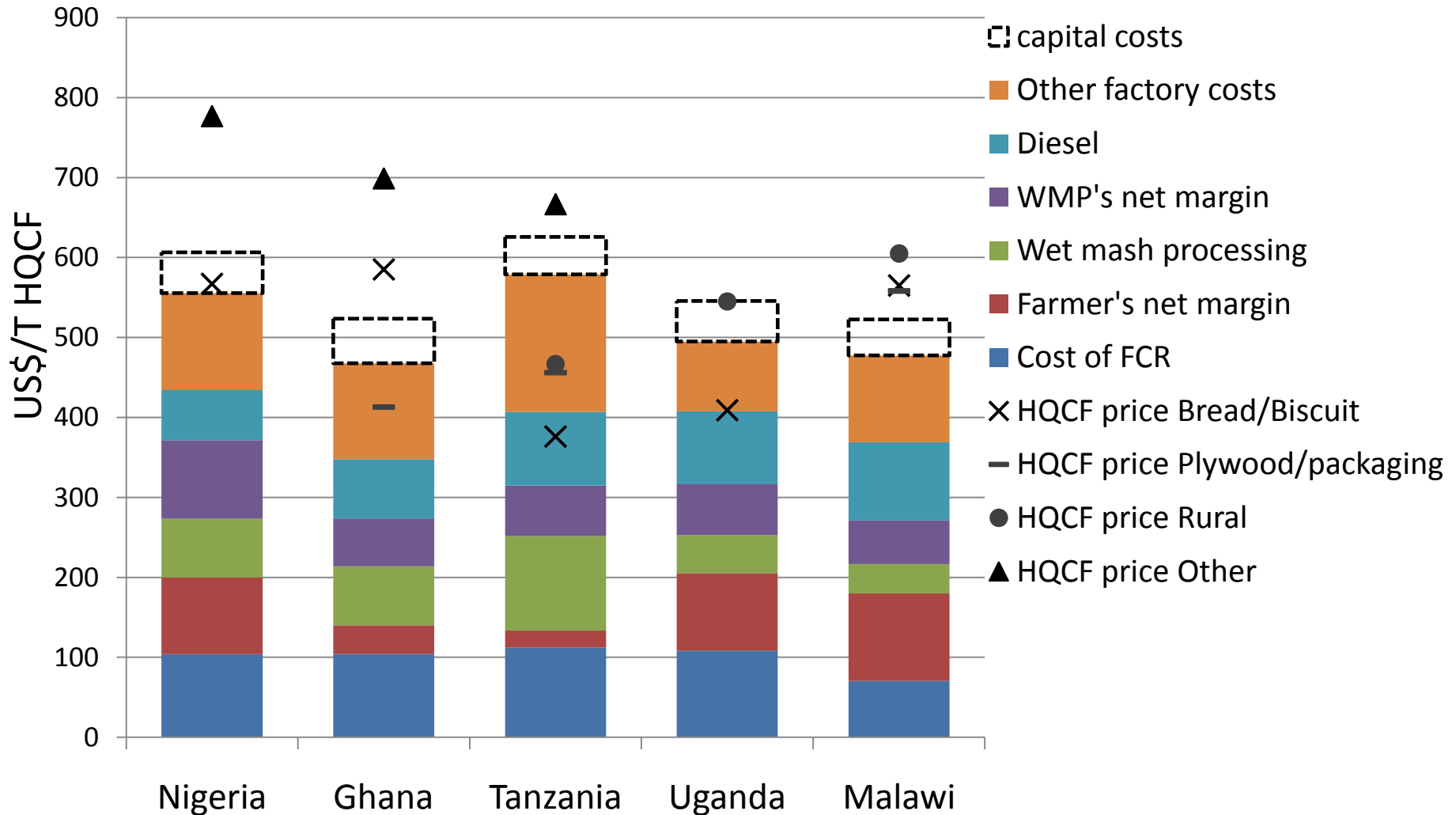
	Nigeria	Ghana	Tanzania	Uganda	Malawi
Flash drying (\$/t HQCF)					
Cost of FCR	104	104	112	108	70
Farmer's net margin	96	36	21	97	110
Wet mash processing	73	74	118	48	37
WMP's net margin	98	60	63	63	54
Diesel	63	74	92	91	98
Other factory costs	121	120	172	88	109
capital costs	51	56	47	50	45
Total	607	523	626	546	522

C:AVA benchmarking

	Nigeria	Ghana	Tanzania	Uganda	Malawi
Sun drying (\$/t HQCF)					
Cost of FCR	104	104	112	108	70
Farmer's margin	96	36	21	97	110
Wet mash processing	73	74	118	48	37
Other sun drying costs	26	24	16	11	11
Capital costs	59	59	37	51	58
Total	358	297	304	315	285

C:AVA benchmarking

Costs of HQCF (flash dried) and projected market prices (Oct 2010)

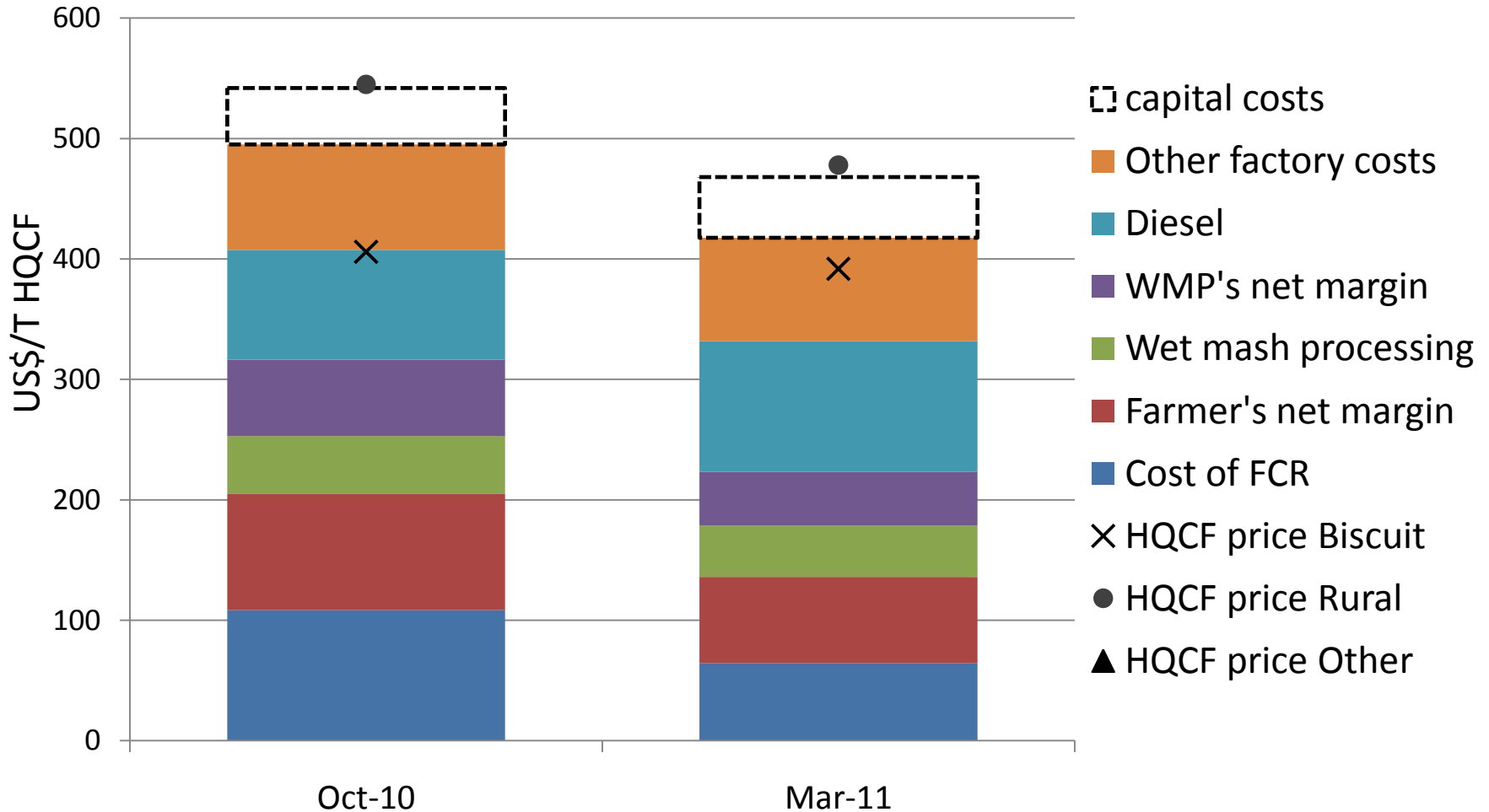


C:AVA benchmarking - Uganda

Prices	October 2010	March 2011
Wheat flour at mill gate (\$/T)	525	652
HQCF – paperboard (\$/T)	443	435
HQCT – bread (\$/T)	545	478
Cassava roots (\$/T)	51	34
Wet mash (\$/T)		
Labour (\$/day)	1.03	0.89
Diesel (\$/litre)	1.06	1.28
Exchange rate (USD to local currency)	1,950	2,300

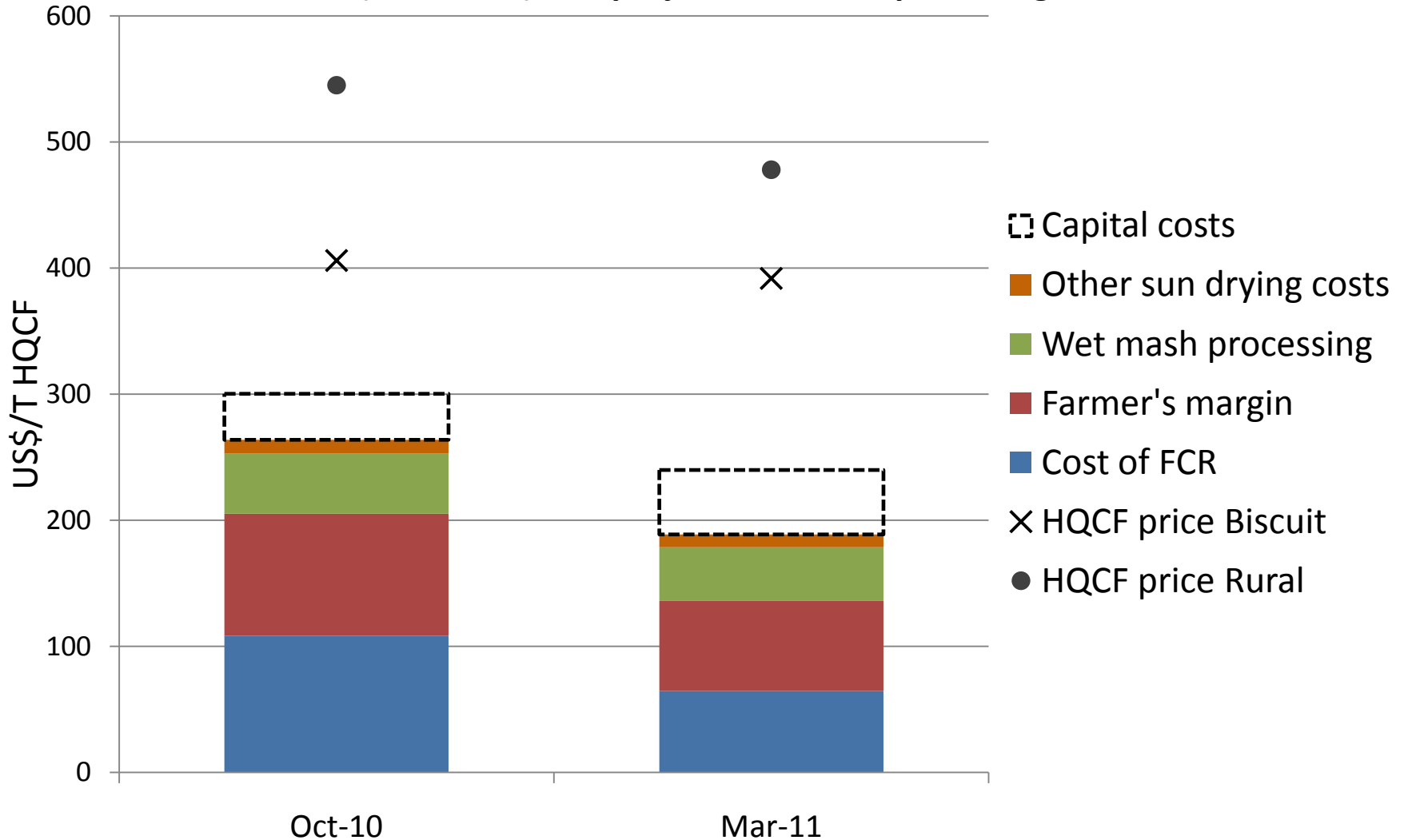
C:AVA benchmarking - Uganda

Costs of HQCF (flash-dried) and projected market prices, Uganda



C:AVA benchmarking - Uganda

Costs of HQCF (sun-dried) and projected market prices, Uganda

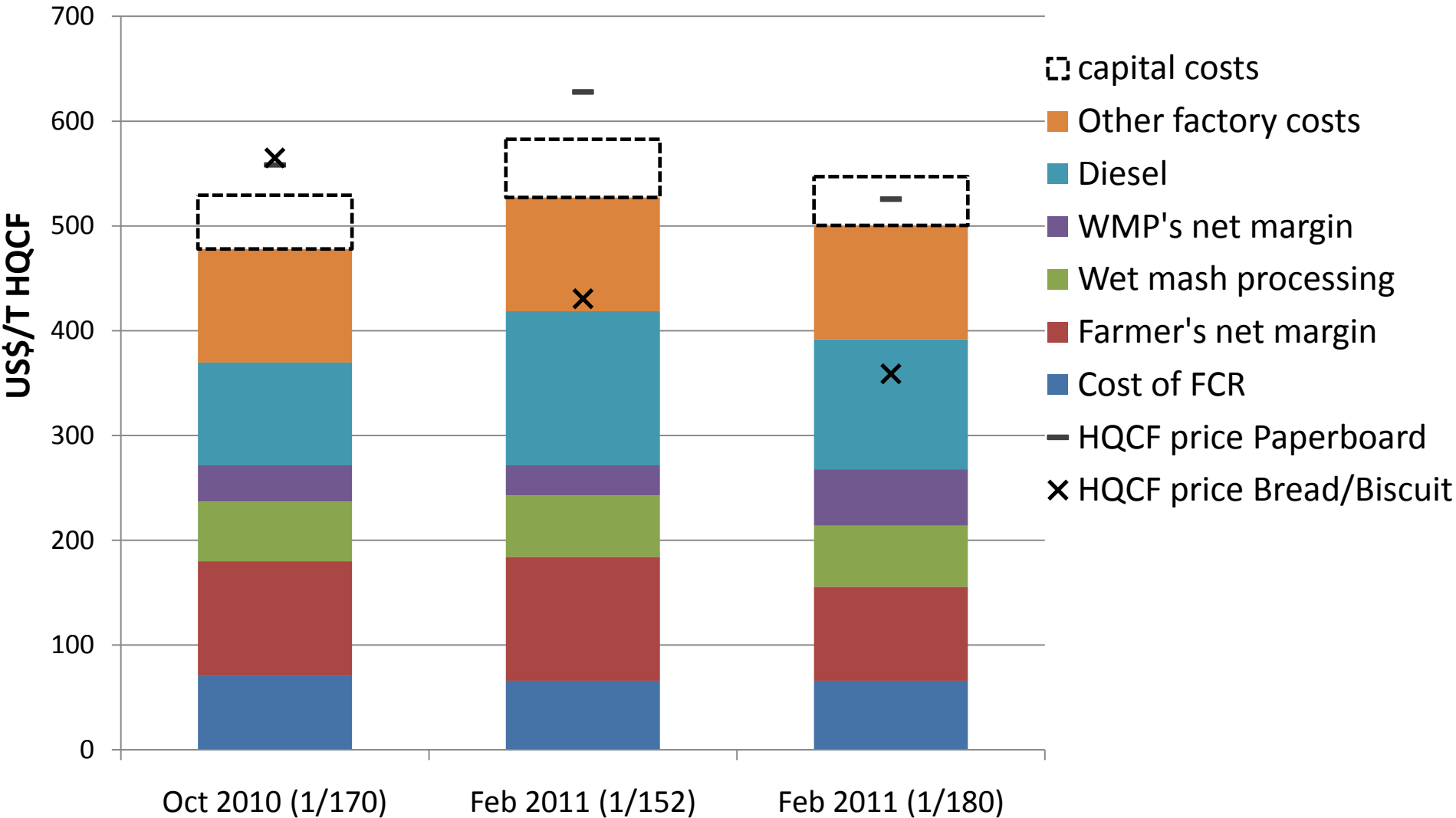


C:AVA benchmarking - Malawi

Prices	October 2010	March 2011	March 2011
Wheat flour at mill gate (\$/T)	625		
HQCF – paperboard (\$/T)	588	658	556
HQCT – bread (\$/T)	595	461	389
Cassava roots (\$/T)	45	46	39
Wet mash (\$/T)	128	128	128
Labour (\$/day)	1	1	1
Diesel (\$/litre)	1.14	1.71	1.44
Exchange rate (USD to local currency)	170	152	180

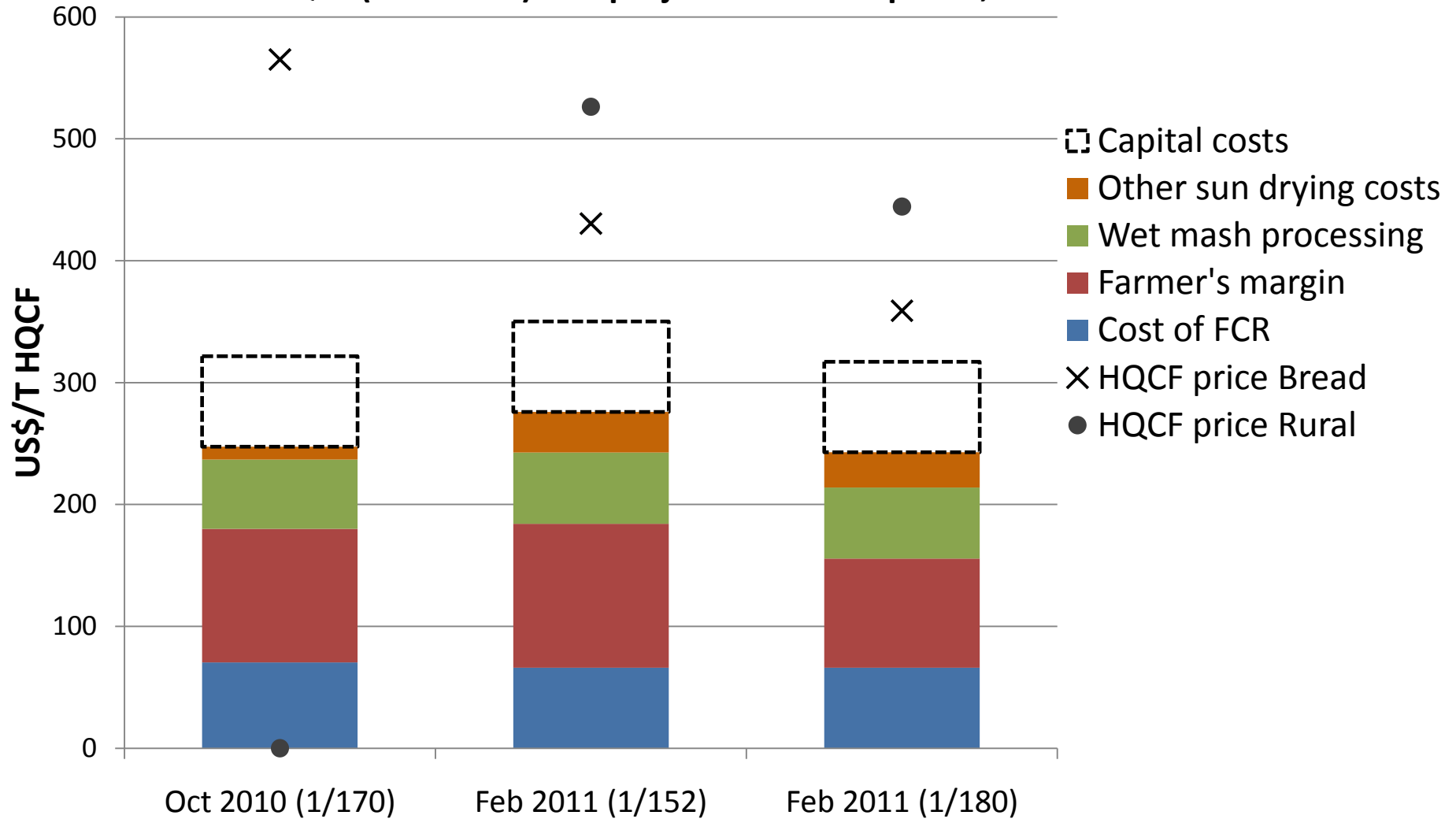
C:AVA benchmarking - Malawi

Costs of HQCF (flash-dried) and projected market prices, Malawi



C:AVA benchmarking - Malawi

Costs of HQCF (sun-dried) and projected market prices, Malawi

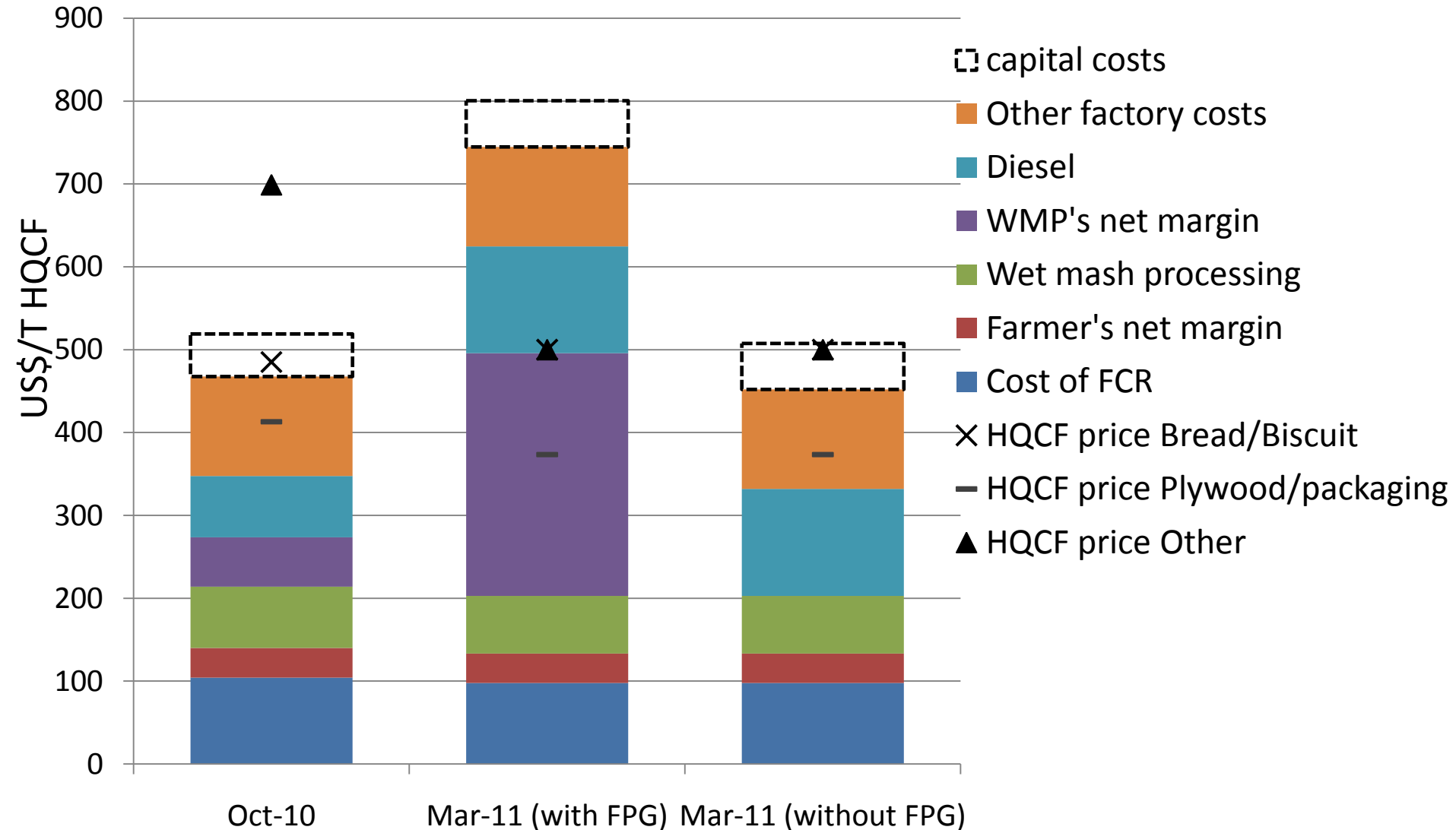


C:AVA benchmarking - Ghana

Prices	October 2010	March 2011
Wheat flour at mill gate (\$/T)	780	(900)
HQCF – paperboard (\$/T)	428	373
HQCT – bread (\$/T)	500	500
Cassava roots (\$/T)	35	33
Wet mash (\$/T)	129	233
Labour (\$/day)	3.57	3.33
Diesel (\$/litre)	0.86	1.5
Exchange rate (USD to local currency)	1.4	1.5

C:AVA benchmarking - Ghana

Costs of HQCF (flash-dried) and projected market prices, Ghana



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Thank you