(6b)	**Fusarium Research Option B: Integrated crop and disease management to reduce the impact of Fusarium R1, R2, STR4, TR4**
Countries	**20** (3 African countries, 9 Asian countries, 8 LAC countries) where Fusarium is either already present or will very likely spread in the near future if no major intervention occurs.
Cultivar groups considered	For the assessment of this research option, all **6** cultivar groups **(AAA Cavendish, other AAA, AAB Plantain, other AAB, ABB)** were considered threatened/susceptible to TR4 whereas **only 'other AAA' and 'other AAB'** were considered threatened/susceptible to Race 1. We do not consider Race 2 in the assessment of this research option since it is not very likely that the research output would be used for planting ABB. In the case of integrated management of TR4, the target domain comprises the production area of all cultivar groups in LAC and Asia whereas in Africa only the 'AAA Cavendish' production areas in Cameroon, Ghana and Ivory Coast are targeted. With respect to integrated management of Race 1, only 'other AAA' and 'other AAB' in Asia and LAC are assumed to be targeted.
Current and likely future spread	Although Fusarium TR4 and Race 1 are already present in some countries, we assume that the production area currently affected is zero percent in all countries since there are no reliable figures about the actual spread. The estimation of the likely future spread of the disease was made **separately for each cultivar group and country** by applying a 'Foc scale' that we developed. We assumed that 100% of the banana production area in the included countries is susceptible to Foc.
Benefits: - Increase in yield - Reduction in postharvest losses	 **80%** (Yield recovered) **No effect**
Production costs	**Increase of 20%**
Adoption ceiling	**30-50% of future Foc affected and targeted area**, depending on country and cultivar group. This translates into **0.2-24.6% of the total national production area.**
Research period	**10 years**
Technology release	The technology will be available in **10 years** in all included countries (immediately after successful development of research output)
Time from first adoption until estimated adoption ceiling will be reached	**15 years**
Probability of success (up-take of technology)	**25%, 50%, 75%** depending on the importance of banana in national public policy and research investment
R&D costs	**US$30.46 million**
Additional country-level costs	**US$30.46 million** (matched 1:1 with R&D costs)
Resource persons	Charles Staver, Miguel Dita, Luis Perez Vicente

(6b) Fusarium Research Option B: Integrated crop and disease management to reduce the impact of Fusarium R1, R2, STR4, TR4

Country	Production Area ('000 ha)	Area threatened by/susceptible to Foc (% of production area)	Current estimated spread of Foc (% of production area)	Spread of Foc in 25 years (% of threatened area)	Adoption Ceiling (% of area affected in 25 years)	Adoption Ceiling (% of production area) (At_{max})	Years to First Adoption (t_0)	Years to reach maximum adoption At_{max}	Yield Increase (%)	Reduction in Post-harvest Losses (%)	Change in Input Costs (%)	Probability of Success (up-take of technology) (%)
Brazil	498.45	100	0	2.24	48.04	1.07	10	15	80	0	20	75
Cameroon	184.41	16*	0	21.18	50.00	1.69	10	15	80	0	20	50
China	398.19	100	0	50.81	48.36	24.57	10	15	80	0	20	75
Colombia	461.43	100	0	3.77	37.62	1.42	10	15	80	0	20	75
Costa Rica	61.22	100	0	3.77	49.07	1.85	10	15	80	0	20	75
Côte d'Ivoire	411.19	2*	0	21.18	50.00	0.25	10	15	80	0	20	50
Ecuador	266.88	100	0	3.77	47.73	1.80	10	15	80	0	20	50
Ghana	191.75	8*	0	27.55	50.00	1.17	10	15	80	0	20	25
Guatemala	50.55	100	0	3.93	47.27	1.86	10	15	80	0	20	25
India	1,858.28	100	0	7.09	34.32	2.43	10	15	80	0	20	75
Indonesia	320.03	100	0	28.63	37.65	10.78	10	15	80	0	20	50
Malaysia	56.82	100	0	14.92	38.16	5.69	10	15	80	0	20	25
Mexico	86.31	100	0	2.23	47.77	1.07	10	15	80	0	20	50
Myanmar	65.43	100	0	37.72	33.31	12.56	10	15	80	0	20	25
Nicaragua	14.46	100	0	1.00	37.92	0.38	10	15	80	0	20	25
Pakistan	31.98	100	0	50.45	44.25	22.32	10	15	80	0	20	25
Peru	120.83	100	0	2.24	33.72	0.75	10	15	80	0	20	50
Philippines	391.88	100	0	50.80	40.99	20.82	10	15	80	0	20	50
Thailand	132.08	100	0	38.01	38.21	14.53	10	15	80	0	20	25
Vietnam	102.17	100	0	50.77	39.20	19.90	10	15	80	0	20	25

**The target domain comprises only 'AAA Cavendish' production areas*

Source: Strategic Assessment of Banana Research Priorities report