

Online supplement 2.1. Selected attributes of the Human Modified Landscapes recognised in the Pan Amazon.

HML Code	Row Labels	Total area (ha)	Original forest (ha)	% deforestation	Stage of development	Strategic Development Initiatives*	Flagship Infrastructure Assets	Planned Development Initiatives	Major Highways [planned]	Paved	Secondary Road network	Agricultural Production Models	Key Mineral Resources
		49,720	46,220	41%			Amazon River Corridor						
1	Lower Amazon, North Bank	49,720	46,220	40%	Forest Frontier	POLOAMAZONIA - IV ENID/PAC: Amazonas - Madeira IIRSA: Amazon Hub(AM-6)	Multiple river ports Trombetas bauxite mine Jari plantation & pulp mill HP Santo Antonio do Jari (373 MW) HP Balbina (250 MW) 500 kV line OPGW internet connection	Industrial mines / <i>Reserva Nacional de Cobre e Associados</i> (RENCA) BR-163 to Suriname HP Proteira (2 GW) HP x3 on Jari (1.2 GW) HP x3 on Paru (1.8 GW) Bridge at Óbidos	PA-254 PA-419 PA-429 [BR-163]	no no no -	limited	ranching, small-scale agriculture plantation forestry	Fe, Mn, Cu, Bauxite
2	Lower Amazon, South Bank	17,500	15,976	43%	Forest Frontier	ENID/PAC: Amazonas - Madeira IIRSA Amazonas (AM-6)	Jurutu Bauxite mine Multiple river ports	Autazes potassium mine Bridge at Óbidos Fibre optic cable on riverbed	AM-010 AM-070 PA-257	yes yes no	no	wild fisheries, non-timber forest products (açai)	Potash Bauxite
3	Central Amazon - Solimoes	7,508	7,075	32%	Forest Frontier	ENID/PAC: Amazonas - Madeira IIRSA: Amazon Hub (Am-6) PHE Amazonas- Solimões	Multiple river ports Coari gas terminal & pipeline Iquitos oil field logistics Tabatinga & Leticia airports	HP Mazan Samaririza - Iquitos road Fibre optic cable on riverbed 138 kV line (Yurimaguas – Iquitos)	BR-174 BR-319 AM-010 AM-254 LO-103	yes yes yes yes yes	limited	wild fisheries, timber, non-timber forest products	Oil & gas
4	Santarem	4,995	4,822	66%	Consolidated Frontier	IIRSA: Amazon Hub (Am-5 & AM-6) PHE Amazonas - Solimoes	Urban area Grain terminal HP Curuá-Una (30 MW) 250 kV line Beef slaughter house (1) OPGW internet connection	Ferrogrão (EF-171) Fibre optic cable on riverbed	BR-163 PA_370	yes yes	limited	soy-maize, beef	
4	Manaus	375	318	80%	Consolidated Frontier	ENID/PAC: Amazonas - Madeira IIRSA Amazonas (AM-6) IIRSA Guiana (Gu-1)	Urban Area Free Trade Economic Zone Port of Manaus International Airport Instituto Nacional de Pesquisas da Amazônia (INPA) OPGW internet connection	Centro do Bionegócios da Amazônia (CBA) Fibre optic cable on riverbed	BR-174 BR-319 AM-010	yes	yes	wild fisheries, forestry, non-timber forest products	
4	Macapá	260	89	24% %	Consolidated Frontier	IIRSA Amazonas (AM-6) IIRSA Guiana (Gu-4)	Grain terminals at Port of Santana OPGW internet connection	Integration with Guiana coast	BR-156 BR-210	yes	limited	wild fisheries, forestry, non-timber forest products	
		1,901,592	1,605,297	48%			Southern Amazon						
5	Belem - Marabá	92,598	89,814	63%	Agricultural Frontier	PIN: Rodovia Transbrasiliana ENID/PAC: Amazonas-Madeira IIRSA: Amazonas (Am-5) PHE: Tocantins - Araguaia	HP Tucuruí (8.5 GW) Tucuruí Locks River and ocean ports 500 kV line Aluminum smelter Bauxite mines at Paragominas and Rondon do Pará Bauxite slurry pipeline Palm oil extraction mill Grain terminals Beef slaughterhouse (1) OPGW internet connection	Ferrovias Ferrovia Paraense Hidrovia Tocantins Clearing of Pedral de Lourenço	BR-010 PA-475 PA-151 PA-254	yes yes 60%	extensive	palm oil, açai, beef, tree plantations soy-maize	Bauxite

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6	Carajas - São Luis do Maranhão - Belem	187,695	178,538	82%	Consolidated Frontier	Programa Grande Carajás (PGC) POLOAMAZONIA - II, III, VI ENID/PAC: Araguaia - Tocantins	Carajás mining complex (Fe, CU, Au) Estrada de Ferro Carajás (EF-315) Porto de Itaquí Steel mills Grain terminals (rail & water) Beef slaughterhouse (4) 500 kV line OPGW internet connection	HP Marabá (1.8 GW) +lock HP Serra Quebrada (1.3 GW) + lock Hidrovia Tocantins	PA-275 BR-222 BR-316	yes yes yes	extensive	beef soy-maize tree plantations soy-maize	Fe, Cu, Au, Bauxite
7	Tocantins - Maranhão	254,343	153,229	23%	Consolidated Frontier	Rodovia Brasília - Belem PIN: Rodovia Transbrasiliana ENID/PAC: Araguaia - Tocantins PHE: Tocantins - Araguaia	Ferrovia Norte Sul (EF-151) HP Luís Eduardo Magalhães (900 MW) HP Peixe Angical (498 MW) HP Estreito (1.1 GW) Beef slaughterhouse (6) Grain silos and terminals 500 kV line OPGW internet connection	Hidrovia Tocantins HP Tupiratins (850 MW) + lock HP Ipueiras (480m MW) + lock	BR-010 BR-153 BR-226 MA-996	yes yes yes yes	extensive	beef, tree plantations; soy-maize	Au
8	São Felix do Xingu, Eastern Sector	25,695	24,645	69%	Agricultural Frontier		Once Puma (industrial gold mine) Beef slaughterhouse (3) 230 kV line	Bridge over Rio Fresco	PA-279	yes	moderate	beef, timber	Cassiterite, Au ASGM
9	São Felix do Xingu; Western Sector	34,285	33,983	22%	Forest Frontier		PA-279	Paving PA-279	PA-279	30%	limited	beef, timber	Cassiterite, Au ASGM
10	Rodovia Transamazônica: Novo Repartimento - Itaituba	39,284	38,377	21%	Agricultural Frontier	PIN: Rodovia Tranzamazônica POLOAMAZONIA - V and XI ENID/PAC: Amazonas-Madeira: IIRSA: Amazon Hub (Am-5)	HP Belo Monte (11 GW) 800 kV HVDC station/line 230 kV line to Miritituba grain terminals at Miritituba (4) Beef slaughterhouse (2) OPGW internet connection	PA-230 (paved) Ferrogrão (EF-171) terminal in Miritituba HP Cachoeria de Cai (802 MW)	BR-230 BR-163	25% yes	moderate	beef cacao, timber	Au ASGM
11	Vale do Araguaia	117,059	100,822	67%	Agricultural Frontier	ENID/PAC: Araguaia - Tocantins PPI	230 kV lines Beef slaughterhouse (6)	Hidrovia de Araguaia Ferrovia Paraense	BR-155 BR-158	80%	moderate	beef, soy- maize, timber	Au
12	Upper Xingu	118,540	111,755	49%	Agricultural Frontier	POLOAMAZONIA -I ENID/PAC: Araguaia - Tocantins PPI	230 kV Beef slaughterhouse (2)	Industrial Agriculture Ferrovia Paraense	PA-287 PA-235 MT-322 MT-324 MT-130	no no no no	extensive	beef, soy- maize, timber	Au ASGM
13	Cuiabá - Roncador	157,336	105,236	44%	Consolidated Frontier	POLOAMAZONIA - XIII ENID/PAC: Oeste IIRSA: Amazon Hub (Am-8)	Diversified agro industrial complex Beef slaughterhouse (~12) HP Manso (210 MW) HP Jauru (121 MW) HP Guaporé (120 MW) 500 kV Line Fibre optic cable	HP multiple units (>20) Ferronorte (EF-364) - Rondonópolis to Cuiabá	BR-163 BR-070	yes yes	extensive	beef, swine, poultry soy-maize	Au ASGM
14	Alto Araguaia	91,185	41,981	28%	Consolidated Frontier	ENID/PAC: Araguaia - Tocantins; IIRSA: Central InterOceanic Hub (CI-1)	Ferronorte (EF-364) Rondonópolis grain terminal Beef slaughterhouse (7) kV 500, kV 230 Fibre optic cable	Ferrovia Centro Oeste (EF-354) Center-pivot Irrigation	BR-364 BR-163	yes yes	extensive	soy-maize, beef	Au, Co, Ni, Nb

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15	Sinop - Sapezal	73,998	46,343	33%	Consolidated Frontier	POLOAMAZONIA XIII PIN: Rodovia Cuiabá - Santarem ENID/PAC: Oeste IIRSA - Amazon Hub (Am-5) PPI	BR-163 HP Sinop (402 MW) HP Colider (300 MW) Beef slaughterhouse (3); multiple soy processing mills & silos 500 kV line OPGW internet connection	Ferrogrão (EF-171) Ferrovia Centro Oeste (EF-354) Center-pivot irrigation	BR-163 BR-364	yes yes	extensive	soy-maize, pork, poultry, swine, beef	
16	Northern Mato Grosso	186,408	180,098	51%	Agricultural Frontier	PIN: Rodovia Cuiabá - Santarem POLOAMAZONIA -XIV ENID/PAC: Oeste IIRSA - Amazon Hub (Am-5) PPI	Beef slaughterhouse (~25) HP Tele Pires (1.8 GW) HP São Manuel (700 MW) HP Dardanelos (261 MW) 500 kW Line 230 kW line OPGW internet connection	Ferrogrão (EF-171) Hidrovia Tapajós - Teles Pires HP São Simão Alto (1.5 GW) HP Salto Augusto Baixo (1.2 GW) HP Escondido (510 MW)	BR-163 MT-170 MT-206 MT-208 MT-220 MT-325 MT-338	yes no no no no 30% 30%	extensive	beef, soy-maize	Au diamonds
17	Novo Progresso [BR-163]	35,134	34,539	33%	Agricultural Frontier	PIN: Rodovia Cuiabá - Santarem ENID/PAC: Amazonas-Madeira IIRSA - Amazon Hub (Am-5) PPI	Beef slaughterhouse (1)	Ferrogrão (EF-171) HP Cachoeira dos Patos (528 MW) HP Jardim de Ouro (227 MW)	BR-163	yes	limited	beef	Au ASGM
18	Tapajós - Creporí	40,482	40,220	6%	Gold Mining Frontier	PHE: Tapajós/Teles Pires/Juruena		Hidrovia de Tapajós Status uncertain for: HP São Luis de Tapajós (8 GW) HP Chacorão (3.3 GW) HP Jatoba (2.3 GW)	illegal roads	No	no	timber, wild fisheries	Au ASGM
19	Transamazônica Itaiatuba - Humaitá	106,777	102,636	42%	Forest Frontier	PIN: Rodovia Tranzamazônica ENID/PAC: Amazonas-Madeira:	BR-230 (unpaved)	Paved BR-230 Hidrovia de Tapajós Status uncertain for: HP São Luis de Tapajós (8 GW) HP Chacorão (3.3 GW) HP Jatoba (2.3 GW)	BR-230 AM-174	no no	incipient	timber, beef	
20	South Central Amazonas [BR-319]	4,384	4,345	13%	Forest Frontier	PIN Rodovia BR-319 PPI	BR-319 (partially paved) Fibre optic cable (Porto Velho – Manaus)	Complete paving BR-319	BR-319 BR-174	no no	no	timber, wild fisheries, brazil nut	
21	Northwest Mato Grosso [Colniza]	28,052	27,879	18%	Forest Frontier	POLOAMAZINIA - Region XIV ENID/PAC: Amazonas-Madeira			BR-435 BR-174 MT-206	no no no	no	timber beef	Au ASGM
22	East Rondônia	15,061	14,599	56%	Forest Frontier	ENID/PAC: Amazonas-Madeira		Paving BR-176	BR-176 RO-205				
23	Rondônia	92,599	89,152	76%	Consolidated Frontier	PIN Rodovia BR-364 WB: POLONOROESTE POLOAMAZONIA - Region VII ENID/PAC: Oeste IIRSA - Amazon Hub (AM-8) PPI - BR-364, BR-176	Rodovia BR-364 250 kV line (2) Beef slaughterhouse (10) OPGW internet connection	Ferrovia Centro Oeste (EF-354)	BR-364 BR-421 BR-429 RO-133	yes 80% 20% no	extensive	beef, soy-maize, coffee	Cassiterite, diamonds, Au

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24	Porto Velho / Upper Río Madeira	35,126	33,670	53%	Agricultural Frontier	POLOAMAZONIA - Region VII ENID/PAC: Amazonas-Madeira IIRSA: Peru-Brazil-Bolivia (PBB-1)	HP Jirau (3.75 MW) HP Santo Antonio (3.5 MW) HP Samuel (216 MW) 600m kV HVDC station 230 kV line Madeira Hidrovia Grain terminals & river ports Beef slaughterhouse (1) OPGW internet connection	HP Binacional (3.3 GW) Ferronorte (EF-364) Fibre optic cable on riverbed	BR-364 BR-425	yes yes	no	timber, beef, soy-maize, wild fisheries, forestry	Au ASGM
25	Corredor Interoceanico - Acre	28,958	27,864	58%	Agricultural Frontier	PIN: POLOAMAZONIA - Region VII ENID/PAC: Amazonas-Madeira IIRSA: Peru-Brazil-Bolivia (PBB-)	Beef slaughterhouse (2) 230 kV line	Ferronorte (EF364) / Ferroviario Interoceanico	BR-364 BR-317	Yes	moderate	beef, brazil nuts	
26	Corredor Interoceanico - Pando	23,535	22,769	19%	Forest Frontier	IIRSA: Peru-Brazil-Bolivia (PBB-2 & PBB-3)	Corredor Interoceanico del Sur Brazil nut processing plants	HP Cachuela Esperanza Hidrovia Mamaore - Itenez - Madre de Dios	PE-26B PE-30 BO-8	yes yes no	no	beef, timber, brazil nuts	
27	Corredor Interoceanico - Madre de Dios	23,535	22,769	19%	Forest Frontier	IIRSA: Peru-Brazil-Bolivia (PPG-1 & PBB-3)	Corredor Interoceanico del Sur; Brazil nut processing plants	HP Cachuela Esperanza Hidrovia Mamaore - Itenez - Madre de Dios	PE-26B PE-30 BO-8	yes yes no	no	beef, timber, brazil nuts	Au AGSM Oil & gas
28	RioBranco - Cruziero do Sul Corredor	50,161	49,401	29%	Forest Frontier	POLONOROESTE - Region VII ENID/PAC: Amazonas-Madeira IIRSA: Amazon Hub (Am-4)		Ferronorte (EF-364) Ferroviario Interoceanico Conexión terrestre internacional 250 kV ACLines	BR-364	75%	No	timber, beef, brazil nuts	
29	Chiquitania	58,423	54,758	17%	Agricultural Frontier	IIRSA: Central Interoceanico (CI-4)	115 kV line Paving BO-10 Beef slaughterhouse (1)	Paving BO-17	BO-10 BO-17	80% no	limited	timber, beef, food crops	Au ASGM
30	Santa Cruz Alluvial Plain - Guarayos Sector	18,189	16,818	31%	Forest Frontier	IIRSA: Central Interoceanico (CI-4)	220 kV lines	HP Rositas (444 MW)	BO-9	yes	incipient	soy/ sorghum., rice, sugar cane, food crops, beef	
31	Santa Cruz Alluvial Plain	55,346	48,871	68%	Consolidated Frontier	USAID: Alliance for Progress WB: Tierras Bajas del Este IIRSA: Interoceanico Central (CI-3)	Ferroviario del Oriente Soy and sugar cane mills Beef slaughterhouse (3) oil and gas pipelines	Center-pivot Irrigation Parque Eólico Warnes (108 MW)	BO-4 BO-9	yes yes	extensive	soy/ sorghum., rice, sugar cane, food crops, beef	Oil & gas
		281,894	261,225	36%			Andean Amazon						
32	Chapare - Yapacaní	11,707	11,371	42%	Coca Frontier	USAID Alliaace for Progress CA: Marginal de la Selva USAID: Desarrollo Alternativa IIRSA: Central Interoceanic(CI-5)	Chimore airport Ivigarzama River port HP Corani 54 MW HP Misicuni (126 MW) HP San Jose (124 MW) HP Santa Isabela (93 MW) 230 kV line (x2) oil and gas pipelines Urea plant	Carretera TIPNIS	BO-4 BO-24	yes yex	extensive	coca, food crops	Oil & gas

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33a	La Paz Yungas - Corioco - Caranavi - Alto Beni	8,888	8,027	17%	Coca Frontier	IIRSA: Peru-Brazil-Bolivia (PBB-2) USAID - Alt. Development UNODC - Alt. Development	HP Zongo cascade (160 MW)	HP Bala (400 MW) HP Chepete (3.3 GW)	BO-3	75%	limited	coca, coffee, cacao, food crops	Au ASGM
33b	La Paz Yungas - Distritos Mineros Norte y Sur	6,312	6,156	9%	Gold Mining Frontier	USAID - Alt. Development UNODC - Alt. Development	HP Miguillas cascade (130 MW) HP Taquesi cascade (90 MW) HP Yanacocha (51 MW)						
34	Yucuma - Rurrenabaque - Ixiamas	4,522	4,335	26%	Forest Frontier	CA: Marginal de la Selva IIRSA Peru-Brazil-Bolivia (PBB-2)	Rurrenabaque - Buenaventura Bridge Sugar cane processing mill	HP Bala (400 MW) HP Chepete (3.3 GW)	BO-2	50%	incipient	food crops, sugar cane, timber	Oil & gas
35a	Peruvian Yungas Sandia Alta	7,908	7,549	32%	Gold Mining Frontier	USAID - Alt. Development UNODC - Alt. Development	HP Sandia (350 MW)		PE-34-H	yes	limited	coca food crops	Au ASGM
35b	Peruvian Yungas Sandia Baja	311	309	62%	Coca Frontier	USAID - Alt. Development UNODC - Alt. Development			PE-34-H	yes	limited	coca food crops	Au
35c	Peruvian Yungas Pilcopata	770	763	12%	Coca Frontier	USAID - Alt. Development UNODC - Alt. Development			CU-113	no	limited	coca food crops	Au
35d	Peruvian Yungas La Convención	3,120	2,967	25%	Coca Frontier	USAID - Alt. Development UNODC - Alt. Development	HP Macchu Picchu (160 MW) Gasoducto de Camisea	HP Ilapani (327 MW) Gasoducto Sur Peruano	PE-28-B CU-104 CU-105	yes no no	limited	coca food crops	Oil & gas
35e	Peruvian Yungas Valle de los Ríos Apurímac, Ene y Mantaro (VRAEM)	857	842	4%	Coca Frontier	USAID - Alt. Development UNODC - Alt. Development	HP Mantaro (798 MW) HP Restitución (210 MW) 138 kV line (x6)	HP Paquizapango (2 GW) HP Tambo 40 (1.3 GW) HP Tambo Puerto Prado (629 MV) HP Tango 60 (579 MW)	PE-28-B	50%	limited	coca food crops	
36	Madre de Dios Piedmont	6,470	6,184	17%	Gold Mining Frontier	CA: Marginal de la Selva IIRSA Peru-Brazil-Bolivia (PBB-1 & PBB-3)	Interoceanico de Sur HP San Gaban 2 & 3 (2580 MW) HP Angel (60 MW) 138 kV line	HP San Gaban 1 & 4 (220 MW)	PE-30-C MD-102 CU-114	yes no no	limited	timber, food crops	Au ASGM Oil & gas
37a	Selva Cental /Oxapampa - Satipo	1,505	1,444	59%	Consolidated Frontier,	CA: Marginal de la Selva CA: Marginal de la Selva	HP Chimay (149 MW) HP Hullamayo (134 MW) HP Yaupai (102 MW) HP Yuncan (130 MW) HP Malpso (108 MEW) 138 kV line (x3)		PE-5-S PE-5-N	yes	extensive extensive	coffee, food crops coffee, food crops	
37b	Selva Cental / Oxapampa - Satipo	6,579	6,453	31%	Agricultural Frontier								
38	Gran Pajonal - Atalaya	2,242	2,154	25%	Forest Frontier	CA: Marginal de la Selva			PE-5-SA	no	limited	timber, beef, food crops	
39	Ucayali Tributaries	1,719	1,651	32%	Forest Frontier	IIRSA: Amazon Hub (Am-4)		IIRSA: Conexión terrestre Peru-Brazil	logging roads			timber, food crops	Au ASGM
40	Huánuco - Pasco Piedmont	18,718	7,773	42% %	Agricultural Frontier	CA: Marginal de la Selva GOP: Carretera Federico Basadre; IIRSA: Amazon Hub (Am-4, Am-8)	Amazon Hidrovia river port Oil palm processing plants, Puerto de Pucallpa Aguaytía Energy (gas) 118 kV line	Expansion of oil palm	PE-05-N PE-18-C UC-104 HU-104	yes yes no	moderate	oil palm, cacao, coca, beef, food crops timber, non-timber forest products	Oil & gas
41	Pucallpa	2,753	2,625	77%	Consolidated Frontier								

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42a	Upper Huallaga	1,911	1,862	73%	Consolidated Frontier	CA: Marginal de la Selva GOP: Fernando Belaunde	Oil palm plantations Palm oil processing plants HP Chaglla (456 MW) HP Huallaga (372 MW) HP Angel I, II, II (60 MW) 118 kV line	Expansion of oil palm	PE-5-N PE-14-A PE-12-A SM-110	yes no no no	moderate	coffee, cacao, oil palm, food crops	
42b	Upper Huallaga	8,117	8,024	36%	Agricultural Frontier								
43a	Lower Huallaga	5,651	5,467	73%	Consolidated Frontier,	CA: Marginal de la Selva GOP: Fernando Belaunde IIRSA: Amazon Hub (Am-3)	Palm oil processing plants Oil Palm Plantations Irrigation systems 118 kV line	HP Pongo de Aguirre (750 MW) HP Mayo I, II, III (800 MW) Expansion of oil palm	PE-5N SM-102 SM-105 SM-106	yes 25% no no	extensive	coffee, cacao, oil palm, sugar cane, rice, food crops	
43b	Lower Huallaga	13,987	13,889	37%	Agricultural Frontier								
44	Yurimaguas Piedmont	6,929	6,805	40%	Agricultural Frontier	CA: Marginal de la Selva GOP: Fernando Belaunde IIRSA: Amazon Hub (Am-3 & Am-6)	oil palm extraction mill oil palm plantations Amazon Hidrovia river port 138 kV line	Amazon Hidrovia improvement, 138 kV line (Yurimaguas – Iquitos) Expansion of oil palm	PE-05NA LO-107 LO-108	yes no no	incipient	oil palm, cacao, coffee, food crops	
45a	Marañon - Chachapoyas	13,644	13,228	26%	Consolidated Frontier	CA: Marginal de la Selva IIRSA: Amazon Hub (Am-3 & Am-6)	Oleoducto Norperuano HP Isimanchi (50 MW) Corredor Interoceanico Norte (PeE-5N) 138 kV line	HP Rentema (1.5 GW) HP Vera Cruz (720 KW) HP Chadin (600 MW) + 35 HP plants up-river (~7 GW)	PE-682 PE-5N PE-5NC	yes	extensive	coffee, cacao, oil palm, sugar cane, rice, food crops	
45b	Marañon - Chachapoyas	5,889	4,614	64%	Agricultural Frontier								
46	Bagua - Saramariza Piedmont	3,736	3,684	10%	Forest Frontier	IIRSA: Amazon Hub (Am-3 & Am-6)	Oleoducto Norperuano HP El Muyo (567 MW) 138 kV line	Carretera - Samariza - Iquitos, HP Manseriche (4.5 GW) HP Escurrebraga (1.8 GW)	[LO-100] PE-5ND PE-5NC	- no 50%	no	food crops	Oil & gas
47	Morona - Santiago	2,120	2,094	8%	Forest Frontier	IIRSA: Amazon Hub (Am-7 & Am-6)	Puerto Morona		EC-40	no	no	timber, beef	Cu, Au ASGM
48a	Ecuadorian Piedmont	18,454	18,241	19%	Consolidated Frontier	CA: Marginal de la Selva IIRSA: Andean Hub (Ad-6) IIRSA Amazon Hub (Am-1, Am-6 & Am-7)	Troncal Amazónica (E_45) HP Paute complex(1.6 GW) HP Coda Coda Sinclair (1.5 GW) HP Delsitanisagua (115 MW) HP San Francisco (230 MW) HP Agoyan (160 MW) HP Mazar (160 MW) HP Quijos (100 MW) HP misc X 10(250 MW) 230 kW line 138 kW	Mirador mine (Cu, Au) Condor mine (Cu) Fruta del Norte mone (Au) Yanantza (cu, Au) HP Zamora Salto 1 (1 GW) HP Zamora Salta 2 (924 MW) HP Zamora Salta 3 (917 MW)	E-45	yes	extensive	cacao, coffee, food crops, beef, timber	Cu, Au ASGM
48a	Ecuadorian Piedmont	18,454	18,241	19%	Agricultural Frontier								
49	Sucumbios - Orellana	13,234	13,008	24%	Consolidated Frontier	Texaco Oil & Gas (1950-1990) IIRSA: Amazon Hub (Am-1)	Oil production fields; Oleoducto Transecuatoriano Oleoducto de Crudos Pesados Oil palm processing plants 230 kW line	Puerto Providencia	E-10 E-20	yes yes	extensive	coffee, cacao, oil palm, food crops timber	Oil & gas
50	Sucumbios - Orellana	13,234	13,008	24%	Agricultural Frontier								
51	Putumayo - Caquetá	20,581	19,928	35%	Coca Frontier	CA: Marginal de la Selva IIRSA: Eje Amazonas (Am-2) IIRSA: Andean Hub (Ad-6)	Oil production fields Oleoducto Transandino	Puerto Assis	CR-65 CR-45	50%	moderate	coca, beef timber	Oil & gas
52	Central Caquetá	13,152	12,709	87%	Consolidated Frontier	CA: Marginal de la Selva IIRSA: Andean Hub (Ad-6)	CR-65		CR-65	yes	moderate	beef timber	Oil & gas

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53	Caquetá - Macarena	22,100	20,709	45%	Agricultural Frontier	CA: Marginal de la Selva IIRSA: Andean Hub (Ad-6) USAID - Alt. Development UNODC - Alt. Development	CR-65	Transversal de la Macarena (CR-65)	CR-65	yes	extensive (illegal/unplanned)	coca, beef timber	Oil & gas
54	Guaviare - Macarena	16,321	15,111	34%	Coca Frontier	USAID - Alt. Development UNODC - Alt. Development	CR-75	Transversal de la Macarena (CR-65)	CR-75 [CR-65]	yes	extensive (illegal/unplanned)	coca, beef, timber	Oil & gas
		177,429	164,995	14%			Guiana Amazon						
55	Roraima	37,268	35,382	31%	Forest Frontier	PIN: Rodovia BR-174 POLOAMAZONIA - Region X ENID/PAC: Arco Norte IIRSA: Guiana Shield Hub (Gu-1, Gu-2)	Beef slaughterhouse (1) Fibre optic cable	HP Bem Querer (708 MW) Agroindustrial complex 500 kV line (Manaus – Boa Vista)	BR-174 BR-210 BR-433 BR-401 RR-171 RR-210	yes 50% no no no	extensive	beef rice soy-maize oil palm timber	Au ASGM diamonds
56	Arco Minero - Venezuela	6,847	5,290	13%	Consolidated Frontier	CVG: Corporación Venezolano de Guayana IIRSA: Guiana Shield Hub (Gu-1)	Industrial gold mines iron ore and bauxite mines HP Guri (10 GW) HP Caruachi (2.2 GW) HP Macagua (2.69 GW) Los Pijiguaos (bauxite) San Isidro/ Barranacos /Altamira (Fe) Ciudad Guyana Metallurgical complex	HP Tocoma (2.1 GW)	VE-10	yes	moderate	timber	Au ASGM diamonds
57	Coastal Guiana	38,645	33,307	23%	Consolidated Frontier	IIRSA: Guiana Shield Hub (Gu-4)	Bauxite mines (abandoned) Coastal Highway	Offshore oil & gas	Coastal Road East West IIRSA Link	yes	moderate	sugar cane, rice	Bauxite, Oil & gas
58	Guyana - Venezuela Greenstone Belt	37,655	35,891	3%	Gold Mining Frontier	IIRSA: Guiana Shield Hub (Gu-2 & Gu-3)	Georgetown Letham Highway Industrial gold mines: Omai, Aurora, Toroparu Hill, Karouni , Eagle Mountain, Las Cristinas, Lo Increible	HP Amalia Falls (110 MW) Industrial gold mines (~5)	Georgetown Letham Highway VE-10	no yes	no	timber	Au ASGM
59	Suriname - French Guiana Greenstone Belt	49,118	48,518	4%	Gold Mining Frontier	IIRSA: Guiana Shield Hub (Gu-4)	Guiana Space Centre HP Brokopondo (30 MW) HP Petit-Saute (110 MWO Industrial gold mines: Montagne d'Or, Rosebel, Saramaca, Merian	Industrial gold mines (~5)			no	timber	Au ASGM
60	Amapá	7,896	6,607	12%	Forest Frontier	POLOAMAZONIA XII ENID/PAC: Arco Norte IIRSA: Amazon Hub (Am-6) IIRSA: Guiana Shield Hub (Gu-4)	HP Ferreira Gomes (MW 252) HP Cachoeira Caldairão (MW 219) HP Coaracy Nunes (MW68) Tucano gold mine Serra de Navio mine (Mn, Fe)	Pavement of BR-156 Off-shore oil & gas Industrial mines	BR-156 BR-210	50% no	limited	timber beef	Mn, Fe Au ASGM Oil & gas

Miscellaneous abbreviations: HP: hydropower plant, ASGM: artisanal and small-scale gold mining; OPGW -- Optical ground wire is a fibre optical cable used in overhead power lines.

Development Initiatives

Acronym	Program / Entity	Period	source
CVG	Corporación Venezolana de Guayana	1960 - present	https://iamvenezuela.com/2017/04/sede-de-la-corporacion-venezolana-de-guayana-cvg/
USAID	Alliance for Progress	1960 - 1970	https://www.usaid.gov/sites/default/files/documents/1862/MEMORY.pdf
CA	Comunidad Andina, Carratera Marignal de la Selva	1963 -present	https://hdl.handle.net/2027/mdp.39015021323194?urlappend=%3Bseq=233
POLOAMAZINIA	Programa de pólos agropecuários agrminerais da Amazon ia	1964 - 1988	https://issuu.com/bibliovirtualec/docs/polamaz__nia
PIN	Programa de Integração Nacional	1969 - 1974	http://www.fgv.br/cpdoc/acervo/dicionarios/verbete-tematico/programa-de-integracao-nacional-pin
WB: POLONOROESTE	World Bank the Northwest Region Integrated Development Program	1980 - 1990	http://www.iirsa.org/proyectos/Principal.aspx
WB: Tierras Bajas del Este	World Bank, Eastern lowlands: natural resource and agricultural production project	1991 - 2000	http://documents1.worldbank.org/curated/en/801411468227710688/pdf/multi-page.pdf
ENID/PAC	Eixos Nacionais de Integração e Desenvolvimento (Programa Brasil em Ação)	1999 - 2010	https://web.bndes.gov.br/bib/jspui/handle/1408/11854
IIRSA	Iniciativa para la Integración de la Infraestructura Regional Suramericana	2000 - present	http://www.iirsa.org/proyectos/Principal.aspx
UNDOC	United Nations Office on Drugs and Crime -Alternative development	2000 - present	https://www.unodc.org/colombia/es/da2013/daprincipal.html
USAID	United States Agencia United States Agency for International Development - Aslternative	2000 - present	https://www.usaid.gov/sites/default/files/documents/1862/ad-fs-english-4apr18_1.pdf
PHE	Plano Hidroviario Estrategico	2013 - present	https://www.gov.br/infraestrutura/pt-br/assuntos/transporte-aquaviario/plano-hidroviario-estrategico
PPI	Programa de Parcerias de Investimentos	2016 - present	https://www.ppi.gov.br/projetos1#/s/Em%20andamento/u//e//m//r/
GOP	Government of Peru / Fernando Belaunde	1960s	