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Electronic Supplementary Material

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**Title: Assessment of ecosystem services in restoration programs in China: a systematic review**

Table S1. Distribution of the reviewed papers for each ecosystem service analyzed and each ecological restoration program (total number = 89, papers in bold were counted more than once)

Category of ecosystem service	Ecosystem service	Reviewed papers for the Grain for Green Program (GGP)	(%)	Reviewed papers for the Natural Forest Protection Program NFPP	(%)
Regulating services	Climate regulation	Caldwell et al., 2007; Chen et al., 2007a; Li and Pang 2010; Zhang et al., 2010; Chang et al., 2011; Wang et al., 2011b; <b>Lü et al., 2012</b> ; Wang et al., 2012; Wei et al., 2012; Deng et al., 2013; Song et al., 2014; Zhao et al., 2013; Zhao et al., 2014; Zhou et al., 2014; <b>Chen et al., 2015</b> ; Zhang et al., 2016; He et al., 2016; Li et al., 2016	20%	Wu et al., 2011; Yu et al., 2014; Cao and Chen 2015; Jiang et al., 2017	4%
	Erosion regulation	Long et al., 2006; Li et al., 2010; Fu et al., 2011; Gate et al., 2011; Xu et al., 2011; Deng et al., 2012; <b>Lü et al., 2012</b> ; <b>Lu et al., 2013</b> ; <b>Su and Fu 2013</b> ; <b>Jia et al., 2014</b> ; Sun et al., 2014; <b>Zheng et al., 2014</b> ; <b>Hayashi et al., 2015</b> ; Zhang et al., 2015; <b>Wang et al.,</b>	17%	Liu et al., 2011b; Guo et al., 2014	2%

		<b>2017</b>			
Provisioning services	Water regulation	<b>McVicar et al., 2007</b>	1%	<b>McVicar et al., 2007</b>	1%
	Food	Feng et al., 2005; Deng et al., 2006; Deng and Shangguan 2011; <b>Lü et al., 2012; Lu et al., 2013;</b> Sun et al., 2006a; Xu et al., 2006; Wang et al., 2014b; Yao and Li 2010; <b>Zheng et al., 2014; Wei et al., 2017</b>	12%		
	Fresh water	Sun et al., 2006b; Chen et al., 2007b; <b>Zhang et al., 2008;</b> Wang et al., 2011a; Feng et al., 2012; Shangguan and Zheng 2010; <b>Lü et al., 2012;</b> Cuo et al., 2013; <b>Su and Fu 2013; Jia et al., 2014;</b> Wang et al., 2014a; <b>Zheng et al., 2014; Hayashi et al., 2015; Wang et al., 2017; Wei et al., 2017</b>	17%	<b>Zhang et al., 2008</b>	1%
	Fibre and timber			Bu et al., 2008; Zhang and Guan 2007; Konig et al., 2014	3%
Supporting services	Genetic resources	Cleary et al., 2014; Liu et al., 2011a; Zhai et al., 2014; <b>Chen et al., 2015</b>	4%	Brandt et al., 2015	1%
	Primary	<b>Su and Fu 2013; Jia et al., 2014;</b>	6%	Yu et al., 2011; <b>Yang et al.,</b>	2%

	production	<b>Yang et al., 2014; Wei et al., 2017;</b> <b>Wang et al., 2017</b>		<b>2014</b>	
	Soil formation	Chen et al., 2008; <b>Li and Pang 2010;</b> Yang et al., 2012; Zhao et al., 2015	4%		
Cultural services	Recreation and ecotourism	<b>Brandt et al., 2012</b>	1%	<b>Brandt et al., 2012</b>	1%

Table S2. Proxy model examples used in ecosystem services approaches

<b>ES</b>	<b>Proxy</b>	<b>Models and tools</b>	<b>References</b>
Climate regulation	Vegetation carbon	Canonical correspondence analysis	Zhang et al., 2016
		Integrated assessment model	Caldwell et al., 2007
Erosion regulation	Soil erosion	Revised Universal Soil Loss Equation	Xu et al., 2011; Lu et al., 2013; Sun et al., 2014; Wang et al., 2017
		Universal Soil Loss Equation	Long et al., 2006; Fu et al., 2011; Lü et al., 2012; Su and Fu 2013; Jia et al., 2014; Zheng et al., 2014
		Statistical analysis	Deng et al., 2012
		Hydrological simulation program-FORTRAN model	Hayashi et al., 2015
Food production	Crop production	Agro-ecological zones methodology	Deng et al., 2006
		Agricultural policy simulation and projection model	Xu et al., 2006
		Land loss and grain productivity	Feng et al., 2005; Sun et al., 2006a
		Energy density	Wang et al., 2014b
		Crop production model	Zheng et al., 2014
		Statistical analysis	Deng and Shangguan 2011; Lü et al., 2012; Wei et al., 2017
		Spatial analysis	Lu et al., 2013
Fibre and	Timber production	LANDIS model	Bu et al., 2008

timber		Computable general equilibrium model	Zhang and Guan 2007
		Surface energy balance algorithm for land and Thornthwaite's method	Zhang et al., 2008
		Integrated valuation of ecosystem services and tradeoffs model	Su and Fu 2013; Jia et al., 2014; Zheng et al., 2014; Wang et al., 2017
Water production	Water yield/runoff/steam flow	Hydrology-land use model	Zhang et al., 2008; Feng et al., 2012; Lü et al., 2012; Wei et al., 2017
		Water carry capacity method	Wang et al., 2014a
		Water yield response model	Sun et al., 2006b; Wang et al., 2011a
		Hydrological simulation program-FORTRAN model	Hayashi et al., 2015
Primary production	NPP	Carnegie–Ames–Stanford approach	Yu et al., 2011; Su and Fu 2013; Jia et al., 2014; Wang et al., 2017; Wei et al., 2017

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